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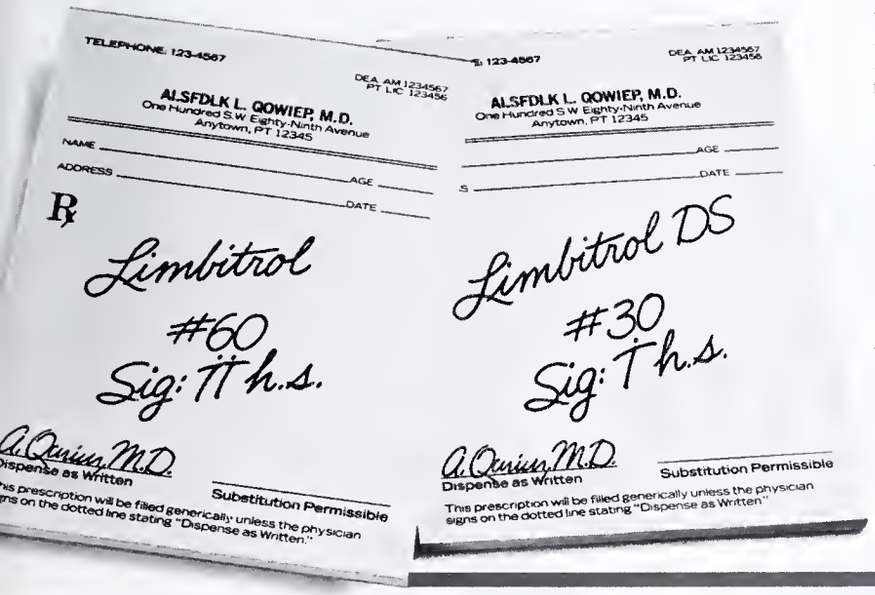
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References: 1. Data on file, Hoffmann-La Roche Inc., Nutley, NJ. 2. Feighner VP, *et al: Psychopharmacology 61:*217-225, Mar 22, 1979.

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Tranquilizer—Antidepressant
Before prescribing, please consult complete product information, a summary of which follows:

Contraindications: Known hypersensitivity to benzodiazepines or tricyclic antidepressants; concomitant use with MAOIs or within 14 days of monoamine oxidase inhibitors (then initiate cautiously, gradually increasing dosage until optimal response is achieved); during acute recovery phase following myocardial infarction.

Warnings: Use with caution in patients with history of urinary retention or angle-closure glaucoma. Severe constipation may occur when used with anticholinergics. Closely supervise cardiovascular patients. Arrhythmias, sinus tachycardia, prolongation of conduction time, myocardial infarction and stroke reported with tricyclic antidepressants, especially in high doses. Caution patients about possible combined effects with alcohol and other CNS depressants and against hazardous occupations requiring complete mental alertness (*e.g.,* operating machinery, driving).

***Usage in Pregnancy:* Use of minor tranquilizers during the first trimester should almost always be avoided because of increased risk of congenital malformations. Consider possibility of pregnancy when instituting therapy.**

Withdrawal symptoms of the barbiturate type have occurred after discontinuation of benzodiazepines (see Drug Abuse and Dependence).

Precautions: Use cautiously in patients with a history of seizures, in hyperthyroid patients, those on thyroid medication, patients with impaired renal or hepatic function. Because of suicidal ideation in depressed patients, do not permit easy access to large quantities of drug. Periodic liver function tests and blood counts recommended during prolonged treatment. Amitriptyline may block action of guanethidine or similar antihypertensives. When tricyclic antidepressants are used concomitantly with cimetidine (Tagamet), clinically significant effects have been reported involving delayed elimination and increasing steady-state concentrations of the tricyclic drugs. Use of Limbitrol with other psychotropic drugs has not been evaluated; sedative effects may be additive. Discontinue several days before surgery. Limit concomitant administration of ECT to essential treatment. See Warnings for precautions about pregnancy. Should not be taken during the nursing period or by children under 12. In elderly and debilitated, limit to smallest effective dosage to preclude ataxia, oversedation, confusion or anticholinergic effects. Inform patients to consult physician before increasing dose or abruptly discontinuing this drug.

Adverse Reactions: Most frequent: drowsiness, dry mouth, constipation, blurred vision, dizziness, bloating. Less frequent: vivid dreams, impotence, tremor, confusion, nasal congestion. Rare: granulocytopenia, jaundice, hepatic dysfunction. Others: many symptoms associated with depression including anorexia, fatigue, weakness, restlessness, lethargy.

Adverse reactions not reported with Limbitrol but reported with one or both components or closely related drugs: *Cardiovascular:* Hypotension, hypertension, tachycardia, palpitations, myocardial infarction, arrhythmias, heart block, stroke. *Psychiatric:* Euphoria, apprehension, poor concentration, delusions, hallucinations, hypomania, increased or decreased libido. *Neurologic:* Incoordination, ataxia, numbness, tingling and paresthesias of the extremities, extrapyramidal symptoms, syncope, changes in EEG patterns. *Anticholinergic:* Disturbance of accommodation, paralytic ileus, urinary retention, dilatation of urinary tract. *Allergic:* Skin rash, urticaria, photosensitization, edema of face and tongue, pruritus. *Hematologic:* Bone marrow depression including agranulocytosis, eosinophilia, purpura, thrombocytopenia. *Gastrointestinal:* Nausea, epigastric distress, vomiting, anorexia, stomatitis, peculiar taste, diarrhea, black tongue. *Endocrine:* Testicular swelling, gynecomastia in the male, breast enlargement, galactorrhea and minor menstrual irregularities in the female, elevation and lowering of blood sugar levels, and syndrome of inappropriate ADH (antidiuretic hormone) secretion. *Other:* Headache, weight gain or loss, increased perspiration, urinary frequency, mydriasis, jaundice, alopecia, parotid swelling.

Drug Abuse and Dependence: Withdrawal symptoms similar to those noted with barbiturates and alcohol have occurred following abrupt discontinuance of chlordiazepoxide; more severe seen after excessive doses over extended periods; milder after taking continuously at therapeutic levels for several months. Withdrawal symptoms also reported with abrupt amitriptyline discontinuation. Therefore, after extended therapy, avoid abrupt discontinuation and taper dosage. Carefully supervise addiction-prone individuals because of predisposition to habituation and dependence.

Overdosage: Immediately hospitalize patient. Treat symptomatically and supportively. I.V. administration of 1 to 3 mg physostigmine salicylate may reverse symptoms of amitriptyline poisoning. See complete product information for manifestation and treatment.

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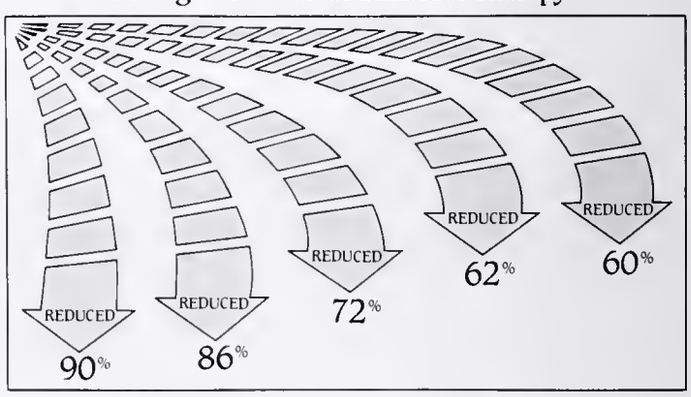
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- First-week reduction in somatic symptoms[1]

Caution patients about the combined effects of Limbitrol with alcohol or other CNS depressants and about activities requiring complete mental alertness, such as operating machinery or driving a car. In general, limit dosage to the lowest effective amount in elderly patients.

Percentage of Reduction in Individual Somatic Symptoms During First Week of Limbitrol Therapy*



*Patients often presented with more than one somatic symptom.

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The transition inter-regnum

President-elect George Bush is taking great strides in softening his image, the image of the hard-hitting campaigner emerging from under the umbrella of the Reagan years. It seems that he simply had to do it, in order to win; he had to push the "liberal-leaning" mainstream of the American people back over toward the "right," toward an image of America standing tall in the face of its many adversities. He has done so during the transition period.

These same adversities have not gone away, but George Bush realizes the people need to be led away from a false image of power and security when, in fact, we all need to gird our loins and get down to hard work to reduce the national debt, to return to our previous leadership status in the world, and to bring about peace and global security (our own "national" security will thus be better assured).

Many physicians the world over have come to realize that their medical and health knowledge and expertise puts them in an advisory position in the political arena.

It is not only the threat of conventional war; wars that have escalated over the course of centuries from armies fighting each other with sticks and stones to alliances of nations geared to total obliteration of opposing alliances by means of genocidal Napalm and fire-bombing of whole cities and countrysides, killing and maiming mostly civilians. It is now the threat of a nuclear holocaust obliterating the planet Earth — the ultimate blasphemy — that makes us physicians feel helpless *to heal;* we must work *to prevent.*

During the inter-regnum between the November 1988 election and the 1989 inauguration of a new president of the United States, while President-elect Bush seeks to heal the wounds resulting from a bitter campaign and to bring the American people to a consensus, IPPNW, the more than 100,000-strong International Physicians for the Prevention of Nuclear War in more than 60 nations, seeks to prevail upon Bush also to thrust the United States into the global arena as a major force for conciliation and peace.

PSR, the American affiliate of this physician-led movement, Physicians for Social Responsibility, is a 50,000-member group. PSR/Hawaii with its 250 members is dedicated to this same task as a chapter of the National.

Come join us in our efforts to heal the world of its ills!

J.I. Frederick Reppun, MD
Editor
Coordinator, PSR/Hawaii

(See the advertisement on page 598)

There must be a better way

It doesn't hurt anyone to go back to school again for a refresher!

The two NaPiers, one a lawyer and the other a Kaiser physician, have collaborated in an article on charting as it relates to professional liability, in this issue of the JOURNAL. What they have to tell us is the gospel truth that makes sense all the way; however, we ignore it, time and again.

Would that there could be devised, in this day and age of super technology, a printer that could transform thought onto paper! And in proper English — or French, or German, Japanese or Russian.

Physicians are notorious for their illegible handwriting; pharmacists are famous for being able to decipher it on prescriptions.

Can anyone figure out who wrote what progress note on a hospital chart? Not by the chicken track at the end of the note. (Chicken tracks are much easier to recognize, so why do we cast aspersions on the poor creature?)

Can the patient's PMD make sense out of the photocopied hospital summary he receives in the mail, days, weeks or months later (if at all), full of blank spots and unsigned, i.e., unverified mostly? This is when a consultant or a surgeon or another hospital-attending has been in charge.

The moral of the NaPier lesson for all of us is that a legible, accurate account of the patient's symptoms and signs in the chart — at the office or in the hospital — supports the search for corroborating laboratory and other technical procedures that will establish the diagnosis as quickly as possible and as cheaply as possible. What is done with the data and the outcome of the treatment is another matter, but that too must be recorded.

The JCAHO (Joint Commission in Accreditation of Healthcare Organizations) monitors what goes on in hospitals; it does a poor job in terms of perusing charts. The

continuum between hospital and medical offices is beyond its scope. The gap in the care of the patient can only be bridged by recorded communications. The least that the JCAHO can do in-hospital is to scrutinize the method of linkage between hospital and medical office. "Outcome" has no meaning otherwise.

J.I. Frederick Reppun, MD
Editor

What *Does* HMA Do?

The highlights of the proceedings of the House of Delegates of the Hawaii Medical Association's 132nd annual meeting in Kona last October, carefully recorded by staff member Marilyn Lindsey and published in this issue of the JOURNAL, provides us with a reason to try to answer the question above.

Many resigning members, former members and Hawaii's physicians who have never joined, comprising nearly half of the MDs and DOs in the State, have questioned the value of joining "organized medicine." The usual petulant query is: "What does the HMA do in exchange for the high dues we must pay?" ($520 a year plus County Medical Society dues; AMA dues in a non-unity arrangement are elective additionally, but the total is very close to $1,000 if one joins organized medicine as a whole. Besides these dues, many physicians pay specialty society dues, and support the Hawaii Medical Library).

As an ombudsman of sorts, sitting in on HMA Council meetings and in meetings of the HCMS Board of Governors, serving as a delegate at the Kona meeting in 1988, we are in a position to do some objective assessments. The following is an attempt to capsulize *What HMA Does Do:*

1) It has a budget of close to $900,000; its income from dues is $540,000;
2) it has a staff of 16;
3) it occupies a new building on purchased, fee-simple property in a choice location that it calls its permanent home, although it does not own it (the HMA Development Co., made up of physician-member investors, does); there is a heavy mortgage lien on it, but what the HMA has to pay out for this is more than offset by revenue from the other tenants in the building, which is fully occupied; HMA's entire floor and parking rights are quite adequate for its administrative functions and for its many committee meetings.
4) HMA speaks for all physicians — non-members as well as members — and is Medicine's voice in our community;
5) it represents Medicine-in-Hawaii when it comes to dealing on the national level, as a component state society of the AMA;
6) it represents Hawaii's physicians in its close relationship with the State Department of Health, the John A. Burns School of Medicine, the Cancer Center, as well as with governmental agencies and com-

(Continued on page 593)

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BRIEF SUMMARY

CONTRAINDICATIONS
There are no known contraindications to the use of sucralfate.

PRECAUTIONS
Duodenal ulcer is a chronic, recurrent disease. While short-term treatment with sucralfate can result in complete healing of the ulcer, a successful course of treatment with sucralfate should not be expected to alter the post-healing frequency or severity of duodenal ulceration.

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Carcinogenesis, Mutagenesis, Impairment of Fertility: Chronic oral toxicity studies of 24 months' duration were conducted in mice and rats at doses up to 1 gm/kg (12 times the human dose). There was no evidence of drug-related tumorigenicity. A reproduction study in rats at doses up to 38 times the human dose did not reveal any indication of fertility impairment. Mutagenicity studies were not conducted.

Pregnancy: Teratogenic effects. Pregnancy Category B. Teratogenicity studies have been performed in mice, rats, and rabbits at doses up to 50 times the human dose and have revealed no evidence of harm to the fetus due to sucralfate. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when sucralfate is administered to a nursing woman.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS
Adverse reactions to sucralfate in clinical trials were minor and only rarely led to discontinuation of the drug. In studies involving over 2,500 patients treated with sucralfate, adverse effects were reported in 121 (4.7%).

Constipation was the most frequent complaint (2.2%). Other adverse effects, reported in no more than one of every 350 patients, were diarrhea, nausea, gastric discomfort, indigestion, dry mouth, rash, pruritus, back pain, dizziness, sleepiness, and vertigo.

OVERDOSAGE
There is no experience in humans with overdosage. Acute oral toxicity studies in animals, however, using doses up to 12 gm/kg body weight, could not find a lethal dose. Risks associated with overdosage should, therefore, be minimal.

DOSAGE AND ADMINISTRATION
The recommended adult oral dosage for duodenal ulcer is 1 gm four times a day on an empty stomach.

Antacids may be prescribed as needed for relief of pain but should not be taken within one-half hour before or after sucralfate.

While healing with sucralfate may occur during the first week or two, treatment should be continued for 4 to 8 weeks unless healing has been demonstrated by x-ray or endoscopic examination.

HOW SUPPLIED
CARAFATE (sucralfate) 1-gm tablets are supplied in bottles of 100 (NDC 0088-1712-47) and in Unit Dose Identification Paks of 100 (NDC 0088-1712-49). Light pink scored oblong tablets are embossed with CARAFATE on one side and 1712 bracketed by C's on the other. Issued 1/87

Reference:
1. Eliakim R, Ophir M, Rachmilewitz D: *J Clin Gastroenterol* 1987;9(4):395-399.

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Indication: Lower respiratory infections, including pneumonia, caused by *Streptococcus pneumoniae*, *Haemophilus influenzae*, and *Streptococcus pyogenes* (group A β-hemolytic streptococci).
Contraindication: Known allergy to cephalosporins
Warnings: CECLOR SHOULD BE ADMINISTERED CAUTIOUSLY TO PENICILLIN-SENSITIVE PATIENTS. PENICILLINS AND CEPHALOSPORINS SHOW PARTIAL CROSS-ALLERGENICITY. POSSIBLE REACTIONS INCLUDE ANAPHYLAXIS.

Administer cautiously to allergic patients.

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics. It must be considered in differential diagnosis of antibiotic-associated diarrhea. Colon flora is altered by broad-spectrum antibiotic treatment, possibly resulting in antibiotic-associated colitis.

Precautions:
- Discontinue Ceclor in the event of allergic reactions to it.
- Prolonged use may result in overgrowth of nonsusceptible organisms.
- Positive direct Coombs' tests have been reported during treatment with cephalosporins.
- Ceclor should be administered with caution in the presence of markedly impaired renal function. Although dosage adjustments in moderate to severe renal impairment are usually not required, careful clinical observation and laboratory studies should be made.
- Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.
- Safety and effectiveness have not been determined in pregnancy, lactation, and infants less than one month old. Ceclor penetrates mother's milk. Exercise caution in prescribing for these patients.

Adverse Reactions: (percentage of patients)

Therapy-related adverse reactions are uncommon. Those reported include:
- Gastrointestinal (mostly diarrhea): 2.5%
- Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment.
- Hypersensitivity reactions (including morbilliform eruptions, pruritus, urticaria, and serum-sickness-like reactions that have included erythema multiforme [rarely, Stevens-Johnson syndrome] and toxic epidermal necrolysis or the above skin manifestations accompanied by arthritis/arthralgia, and frequently, fever): 1.5%, usually subside within a few days after cessation of therapy. Serum-sickness-like reactions have been reported more frequently in children than in adults and have usually occurred during or following a second course of therapy with Ceclor. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.
- Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.
- As with some penicillins and some other cephalosporins, transient hepatitis and cholestatic jaundice have been reported rarely.
- Rarely, reversible hyperactivity, nervousness, insomnia, confusion, hypertonia, dizziness, and somnolence have been reported.
- Other: eosinophilia, 2%; genital pruritus or vaginitis, less than 1%, and, rarely, thrombocytopenia.

Abnormalities in laboratory results of uncertain etiology:
- Slight elevations in hepatic enzymes
- Transient fluctuations in leukocyte count (especially in infants and children)
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- Positive direct Coombs' test.
- False-positive tests for urinary glucose with Benedict's or Fehling's solution and Clinitest® tablets but not with Tes-Tape® (glucose enzymatic test strip, Lilly).

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munity health organizations;
7) it is Medicine's prime lobbyist at the State's legislative sessions;
8) it is the "parent" of the Hawaii Tumor Registry and helps to manage it in conjunction with the State DoH and the Cancer Society, and the University of Hawaii;
9) it publishes the monthly HAWAIII MEDICAL JOURNAL that has a circulation of over 1,900;
10) it has a Director of Communications who sees to it that Medicine's image in the community is favorably presented.
11) The HMA is the ultimate, appellate peer-review level for medical practice in the State;
12) it retains Vernon Woo, Esq., as legal counsel — a very necessary service — succeeding Tom Rice, Esq., who retired in 1988 after 35 years of service to the HMA.
13) The HMA supports the Hawaii Medical Association Auxiliary (HMAA) to the tune of $6,600 a year; the HMAA has worked hard for our benefit in promoting health education and well-being in the State; it has celebrated its 40th year of such service.

Volunteer member-hours amounted to 23,000 in 1987, indicating how much HMA members contribute for the benefit of all physicians, including non-members, and to the community; HMA has some 45 committees under seven commissioners with a budget of $82,000 of which $50,700 is expended by the Legislative Committee; another $20,000 is under the direction of the Cancer Committee in support of the (CCOP) Community Clinical Oncology Program (this is reimbursed to us by the Minnesota CCOP).

We have arbitrarily divided up the committees into five categories on the basis of descending significance in terms of "what HMA does":

I. **Peer Review and Quality Control** (6 of the committees): these deal with maintaining high standards of medical care within our medical community, on the part of both members and non-members.

II. **Advice and Support** (9 committees); these support and advise the agencies and organizations in our community on health care.

III. **Specific Actions** (6 committees); one might say that these committees come forth with the meat of what HMA does.

IV. **Direct Benefits to Members** (7 committees).

V. **Internal and Administrative** (all the rest); the HMA with its component County Medical Societies is a complex corporation!

The work of the Legislative Committee can be split between III and IV and there is also other overlapping, but we feel that in general "What HMA Does" can be grouped into the five categories above. The distribution is not on the basis of size, activity, or number of meetings held. Although Internal and Administrative comes last, it is the foundation upon which the other categories stand.

In analyzing the Specific Actions category, we list those committees that "do" something, i.e., are "substantive" rather than "cognitive." The **Legislative Committee** has done a great deal of lobbying at the Legislature, in particular for tort reform. The **School Health Committee** has developed programs in the community. The **Publications Committee** produces the JOURNAL, which is the house organ and is an outlet for local research and education. The **Cancer Committee** has a large impact on cancer control. The **Community Research Bureau** is the 501(c)3 subsidiary to which HMA contributes to help fund educational and charitable projects in the community. The **Sports Medicine Committee** in past years has put on well-attended symposia of interest to health-minded Hawaii residents, but did not do so in 1988.

At its 132nd annual meeting, the HMA adopted the resolutions listed in the "Highlights." The House of Delegates considered but did not yet take a stand on (a) the AMA's proposal to establish a new nursing corps of Registered Nursing Technicians (RCT) to assist nurses, for the logical reason that the concept first needs to be discussed with the ANA on a national level; and (b) the Harvard Resource-Based Relative Value Scale (RBRVS) for a similar reason.

Here is where all of Hawaii's practicing physicians need to be involved, or "forever after hold your peace." (The same can be said concerning the hot issue of "professional liability," as AMA president-elect Alan Nelson termed malpractice insurance, when he addressed the House.)

If any reader feels that the review above needs additions, deletions or changes, a letter to the editor would be welcome. Jon Won has promised that the staff will be compiling "39 reasons to join the HMA" soon.

J.I. Frederick Reppun, MD
Editor

The reader might remember that in the August '88 issue of the JOURNAL we made mention of Dr. Ma Haide of the People's Republic of China. Dr. Haide was originally the American George Hatem, MD, born in Buffalo, New York. He is probably best known for his efforts to eradicate leprosy in China.

We noted in the *Parade Magazine* of November 20, 1988, the supplement in the Sunday Star-Bulletin & Advertiser, that writer Lloyd Shearer commemorated this man in an article. The interested reader is also referred to the December issue of JAMA in which E. Grey Dimond, MD of the University of Missouri has written Dr. Ma's obituary. Ma Haide died on October 3 in Peking Union Medical College Hospital, of cancer.

J.I. Frederick Reppun, MD
Editor



FROM THE PRESIDENT

The RBRVS Study

One of the big concerns of the AMA this year is the controversial Hsiao Harvard Resource-Based Relative Value Scale sudy (RBRVS). What is the RBRVS? Why was the study done? What is its impact on medicine? These are some of the questions I will try to answer for you.

Between 1975 and 1987, Medicare's per enrollee spending for physician services grew at a compounded rate of 15%. Over the next 10 years, physician's services spending for Medicare will probably triple to exceed spending on Social Security. As a result of this and the growing criticism of the present payment system, pressures have increased for a major overhaul of the Medicare Physician Payment System.

Because of the recent proposals on Physician DRGs and capitation fees, and because some of the specialties have argued that cognitive services (the thinking and caring services provided by all physicians) are substantially undervalued under the existing payment system, a resolution was passed in the AMA House of Delegates to endorse payments for physicians' cognitive services.

In 1986, Congress created the Physician Payment Review Commission (PPRC) to advise both the Secretary and Congress about physician payment issues, including a Relative Value Schedule (RVS). Congress also mandated that the Secretary of the Health and Human Services (HHS) Department study and report by July 1989 on an RVS that could be the basis for a fee schedule system that could be implemented in January 1990 and also the potential effects of such a fee schedule. The PPRC recommended basing such a fee schedule primarily on resource costs.

Health Care Financing Administration (HCFA) announced that the contract could be made only with a university or an independent research institution. Harvard was selected, with AMA becoming a subcontractor.

The RBRVS' objectives were: (1) To develop resource-based relative values for most of the services delivered by 18 medical and surgical specialties; (2) to develop relative values that were comparable across specialties; and (3) to subject the methodology and results for review by medical, statistical and health policy experts.

In order to provide medical guidance, 100 physicians were nominated by more than 30 specialty societies, coordinated by the AMA and chosen by William Hsiao, PhD, and his group to be organized into 14 Technical Consulting Groups (TCGs). The survey sample from 17 specialties was drawn from the AMA Physician Masterfile randomly (excluding foreign graduates with temporary licenses, physicians over 65 years old, physicians with no current address) and were questioned in a half-hour phone poll, after written letters were sent. There was a response rate of only 62%.

To measure the resource costs of physicians' services and procedures, a model was developed that measured three resource factors: (1) Total work expended on a particular service, encompassing the time spent before, during, and after a service, and the intensity with which that time was spent; (2) practice cost; and (3) the costs of specialty training. A cross-linked study was done trying to equate between services or procedures from two different specialties.

The results of the RBRVS were: (1) Current physician charges were not closely related to resource costs (evaluation and management services are compensated at a lower rate than invasive, imaging, and laboratory services — less than 50%); (2) it found wide variation in charges-to-RVRVS ratios within categories of services; (3) it found that pre- and post-service work represents an important component; and (4) it found only small differences in mean work per minute in evaluation and management services with large variations for invasive services.

The stated limitations of the RBRVS were: (1) It doesn't permit inclusion of outcomes or benefits; (2) doesn't take into account the quality of services; (3) doesn't take into account patients' demand for services; and (4) doesn't take into account severity of patients' conditions with the CPT-4.

The Hawaii Medical Association has held two meetings with representatives of all of the specialty societies in Hawaii to educate and inform them of the RBRVS. John H.C. Kim and I attended an AMA-sponsored meeting in Chicago on November 13, 1988, along with 450 representatives of all the state associations and specialty societies. At this meeting, the AMA consulting firm, the Consolidated Consulting Group, that evaluated the RBRVS, found: (1) Researchers used less reliable data, relied on complex estimating techniques and extrapolation methods; (2) there were inadequacies in the government's data on physicians' practice costs (it used the 1983 study), in work measurement and data for extrapolation of the CPT-4 visit codes, verification of extrapolation methods,

and limited data on pre- and post-service work effort; (3) there were significant limits in the accuracy with which the major elements of the RBRVS index could be estimated; and (4) implementation of a system based only on the current RBRVS study could result in serious errors in some individual services, and harm to some physicians and to some specialties.

The Consolidated Consulting Group listed the following recommendations for improving the RBRVS: (1) All aspects of the practice-cost estimates would require improvements in allocation and calculation methods; (2) CPT-4 codes must be improved for office and hospital visits with more uniformity in treatment of "bundled" services, both within and outside of hospital stays; (3) the extrapolation technology needs further verification and refinement, and the RBRVS needs to be extended to the remaining 5,000 CPT-4 codes; and (4) the pre- and post-service estimates also need further study.

The state and national specialty representatives at the meeting were concerned about: (1) Data gathering; (2) too small a sample; (3) frustration on the part of the technical consultants (no preparation, no access to raw data or calculations) in some specialties; (4) outliers (as much as 25% in some specialties); (5) global fees versus only hospital charges (the post-service work stopped on hospital discharge, so those specialties with global or included post-op visits were not taken into consideration); (6) cross-linkage consultants were given no preparation; (7) cross-linkage methodology; (8) logarithmic method compressing data to a lower level; (9) geographical differences; (10) mandatory assignment if accepted; (11) transition time; (12) volume and utilization; (13) cap on the RBRVS; (14) specialty differential; and (15) that it should have included 65-year-old physicians in the study. It was suggested that the AMA assemble all the technical consultants for their input and interpretation, as several consultants stated that the final results of the study for their specialty did not appear to be correct. The conclusion of the AMA at the meeting was that there probably would not be a position accepted until further work was done at the AMA meeting in Dallas in December, because of the many concerns listed above.

What is the potential impact on certain specialties if this RBRVS study were to be adopted in its present form? The gain among general and family practitioners and internists would be high, which mirrors the high portion of their practices devoted to patient visits and consultations. The losses of ophthalmologists, thoracic surgeons, and radiologists would correspond to the greater concentrations of their practices in surgical and radiological services, the types of services for which the average allowed charge would be reduced the most.

What is the overall danger to adopting such a study? It was stated at the AMA meeting that there is no question, that if the RBRVS study is accepted by Medicare, it will be implemented by CHAMPUS and all third-party carriers. There is also the danger that Congress could, in its fight to keep Medicare costs down, mandate assignment (although this is contrary to AMA stated policy). The conversion factor for the RBRVS could very easily be

(Continued on page 607)

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Action: Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalmic centers and release of posterior pituitary hormone.

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Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.[1,2] Also dizziness, headache, skin flushing reported when used orally.[1,3]

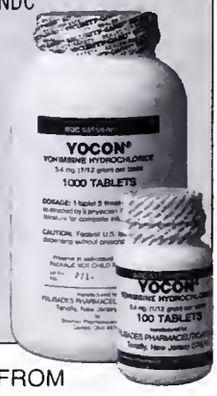
Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.[1,3,4] 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to ½ tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.[3]

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References:

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Medical charts and malpractice: How to avoid costly errors and omissions

Patricia Mathias NaPier*
Bradford Lee NaPier, MD**

A thorough and well-organized medical chart can prevent malpractice from occurring, discourages the filing of groundless lawsuits, and is a useful tool in defending a physician in a medical malpractice action. This paper suggests methods by which a physician may improve record keeping and minimizing medico-legal exposure.

The primary reason for documenting medical diagnosis and treatment is to assist other health-care professionals in accurately diagnosing and treating the patient. Physicians and other health-care professionals rely on a patient's chart. If the chart is incomplete, inaccurate or illegible, the patient's medical care may be compromised.

Plaintiffs's attorneys review medical records to evaluate whether a patient has a viable claim of medical malpractice. If the chart is incomplete, inaccurate or illegible, the physician may increase the risk of being named as the defendant in a malpractice action.

Lawsuits may arise many years after the physician has treated the patient. A case filed in Hawaii in 1985 alleged medical malpractice by a cardiovascular surgeon during a 1962 surgical procedure. The case was finally settled in 1988, after the court refused to dismiss the case. Neither the surgeon, the cardiologist, the surgical assistants, the nurses nor the technicians had any independent recall of the case. They were forced to rely entirely upon the medical records. The patient's parents, by contrast, claimed to recall many of the extraneous facts including specific conversations with the surgeon about their daughter's health status.

The statute of limitations for medical malpractice actions in Hawaii[1] has so many exceptions and loopholes that it provides little protection to the physician against stale claims. A jury is more likely to be convinced by the recall of a patient who sees only a limited number of doctors in his or her lifetime, than by the memory of a doctor who sees dozens of patients every day. *Physicians should write their charts as if the chart will be their only record of events 20 years after treating the patients.* In all likelihood, it will be!

The following suggestions will assist the physician in preparing a medical chart that protects the patient's interests and provides a solid foundation for the defense of a malpractice claim:

1. Write legibly.

A study, conducted at Georgetown University Hospital in 1986 and reported in the *New England Journal of Medicine*[2], found that a "considerable portion of most handwritten medical records are illegible, which confirms the common but unpublished wisdom on this subject." The study also noted that 80% of all physician signatures were illegible. The authors concluded, "The price we pay for illegibility includes lower quality of care, a waste of professional time, potential legal problems, and a waste of resources in duplicating data that are functionally lost because of illegibility."

Although operative reports, discharge summaries and other important portions of the chart are routinely typed, some portions of the chart will inevitably be handwritten. If a note or order is important enough to be written, it is important enough to be written clearly.

Physicians are sometimes asked to give depositions by attorneys simply for the purpose of deciphering handwriting. More important than the inability of lawyers to read doctors' handwriting is the potentially catastrophic consequences of a doctor or other health-care professional being unable to read another's signature, diagnosis, order or prescription.

2. Use only widely recognized abbreviations.

Once the legibility hurdle has been overcome, abbreviations present the next obstacle. A chart that states: "Pt. w/ SOM req. BM&T" may be discernible to an ENT doctor as "patient with serous otitis media requiring bilateral myringotomy and tubes." However, a family practitioner or other treating physician may be unfamiliar with the abbreviation or may use the same abbreviation to describe something different. For example, "AC" can mean "anterior chamber" to a cardiologist, or "acromioclavicular" to an orthopedic surgeon. "BK" can mean "back," or "below the knee." "BS" can mean

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"breath sounds," "bowel sounds" or "blood sugar." "CST" can mean "contraction stress tests," or "convulsive shock therapy." "LBP" can be "low blood pressure" or "lower back pain."

The use of single letters as abbreviations can be even more confusing. For example, "L" is commonly used to describe left, lower, light, labor, liver, liter, living or lumbar. "P" can mean post, premature, phosphorus, pulse, plan, parity, pulmonary, posterior or percussion.

The reader can often discern the appropriate meaning based on the context in which the abbreviation is used, but it is helpful to take some of the guesswork out of reading medical charts. If an obscure abbreviation is to be used throughout the patient's chart, it should be written out in full the first time it is used. For example, "HBO (hyperbaric oxygen)."

3. Record a complete history and physical examination.

A complete history should include identification of the informant, an assessment of the informant's reliability, a history of the patient's present illness, family history, review of systems and patient profile. Even sensitive topics, such as a history of drug or alcohol abuse, venereal disease or emotional problems must be included because they may be important for accurate diagnosis and treatment.

A complete physical examination must include pertinent negative findings. For example, if a patient complains of a hoarse voice over a prolonged period of time, the otolaryngologist should note in the chart that the larynx and hypopharynx were checked and found to be within normal limits. If a patient has a condition that is unchanged upon subsequent examination, for example, a breast mass, it is important to note on the chart that the mass was re-examined and the physician found no change in condition. Standardized anatomical charts or drawings are useful to illustrate the area of the body being discussed.

4. Use the SOAP format (or a similar format) for office visits and progress notes.

The SOAP format is widely used among physicians because it prompts a complete chart entry. "S" is for subjective data and should recount the patient's complaints. "O" is for objective findings that the physician observes upon examination. "A" is for assessment of the patient's condition. "P" is plan for treatment. Whatever the charting format, it must record the patient's status and care, and provide sufficient information to assist others who co-treat the patient.

5. Use objective language.

Unless quoting a patient's subjective complaints, it is best not to make subjective remarks in the medical records. For example, if a patient arrives in your clinic drunk, it is best to note on the chart: "The patient smelled of alcohol, stumbled as he walked, and admitted consuming a fifth of Tequila this afternoon," rather than simply noting that "the patient was drunk." Likewise, instead of describing a patient as a "hypochondriac" or a "malingerer," it is better to state more objectively that you are "unable to find any objective explanation for the patient's subjective complaints."

6. Read the nurses' notes.

Many physicians, making rounds on in-patients, do not take the time to read the nurses' notes. When attorneys review medical records, they often compare the nurses' notes and the physicians' notes for inconsistencies. For example, in a recent case in Honolulu, the surgeon testified that the patient was not cyanotic post-operatively. His progress notes did not mention cyanosis. However, the nursing notes included several references to the patient being cyanotic. The doctor argued in his deposition, "What is blue to the nurse is not blue to me." The discrepancy could have been resolved if the physician had read the nursing notes and discussed with the nurse the level of blueness that is significant as an indication of cyanosis. Instead, the plaintiff's attorney construed the physician's behavior as an attempt to hide a surgical error by denying any post-operative complications.

7. Include the date and time of progress notes and sign them with your surname printed alongside.

Progress notes should be written daily on all in-patients and more frequently on unstable patients. The progress note should include the date and time of day as well as the legible signature of the physician writing the note. When patients are treated by more than one physician it is important to be able to determine who wrote the progress note, particularly if it is cryptic and provides no contextual clues. Suffixes should be included, e.g. "MD," "Resident," "MedStu," "RN," etc.

8. Document any procedures recommended, but refused by the patient.

A Honolulu surgeon recommended amputation to a patient whose right foot was gangrenous. The patient refused. The surgeon failed to note in the patient's chart either his recommendation or the patient's refusal. Several years later, the patient was seen by another surgeon who convinced the patient that her foot needed to be amputated. The patient sued the first surgeon who was left with no documentation to support his position. It became a matter of the patient's word against the doctor's memory. Make a detailed chart entry describing your reasons for recommending the procedure and note the patient's refusal to consent.

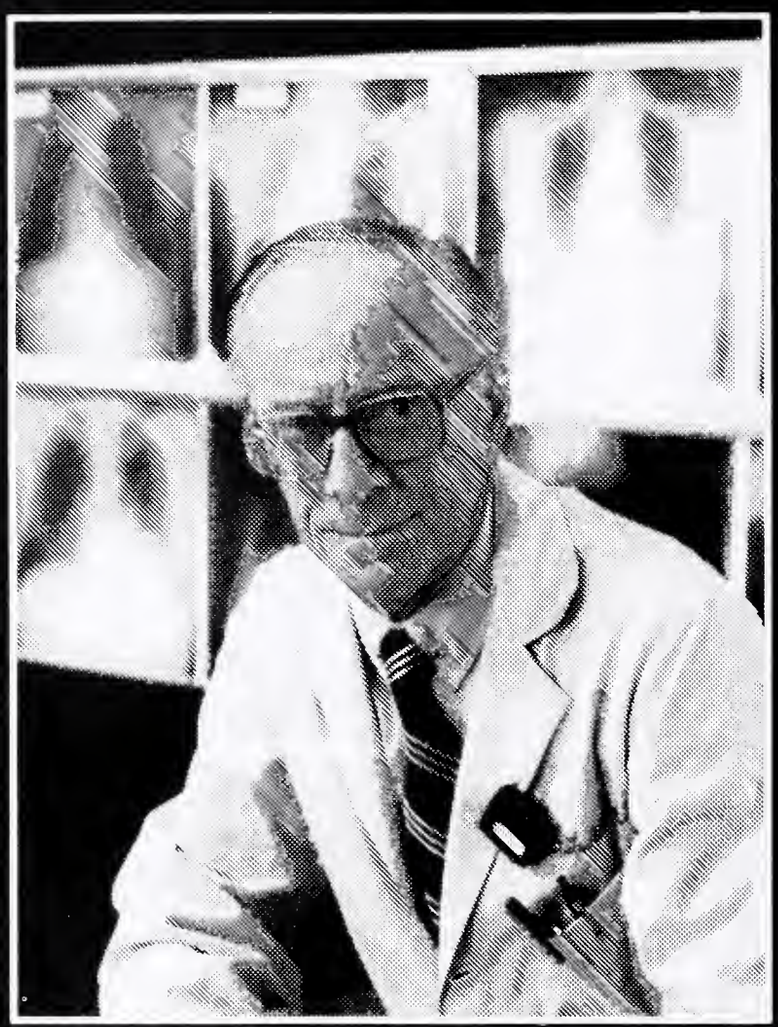
In extreme cases, consider sending a registered letter to the patient who refuses appropriate medical or surgical treatment. Include a copy of the letter and the return receipt in the patient's chart. If the patient's condition deteriorates as a result of the treatment being refused, the patient's family will know that the patient acted against medical advice.

9. Include in the record your recommendation for follow-up care.

At the end of each clinic note, specify an appropriate follow-up plan, such as "patient is to call or return to clinic in one week if symptoms persist," or "patient is to return to clinic in two months for follow-up examination." This puts the onus on the patient to seek follow-up care at the appropriate interval.

(Continued)

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10. Note non-compliance by patient.

If the patient fails to comply with any recommendation as to medicine, treatment or activities, it should be noted in the chart. Patients are often injured as a result of their own negligence in failing to follow medical advice. A medical record that specifies the patient's failure to follow the doctor's recommendations for care and treatment is invaluable in proving contributory negligence by a plaintiff, or in establishing that the physician was not negligent. One chart included the cryptic description "hypocompliance." This was better than no notation, but was not specific as to the exact nature of the patient's lack of compliance. For example, it would have been better to note: "Patient continues to smoke two packs per day against medical advice."

11. Proofread dictated medical records.

Discharge summaries and operative reports are almost universally typewritten. The typist is not a physician and may be unfamiliar with the terminology and procedures involved. Careful proofreading of all typed medical records, whether originally dictated or handwritten, will help to eliminate ambiguities or errors. Blank lines should be filled in and spelling or terminology corrected.

12. How to change or correct a medical record.

If an error is made in the medical record, it should be corrected by crossing out the incorrect material with a single line and inserting the correct information. The change should be initialed and dated. It is important to follow this procedure so that it is evident the change was made to correct an error, and not to hide information or reconstruct the facts. If an error is noted in the chart after a lawsuit has been filed or threatened, consult with your defense attorney before making any corrections. An innocent correction may be misconstrued as a cover-up attempt during the heat of litigation.

13. Operative reports and discharge summaries must be dictated or written promptly.

During litigation, plaintiffs' attorneys criticize doctors who wait days or even weeks to dictate their operative reports and discharge summaries. If the physician offers testimony in deposition or trial adverse to the plaintiff's interest (which is virtually always the case), the plaintiff's attorney will attempt to impeach the testimony of the physician by pointing out the delay between the procedure and the dictation, the number of patients the doctors saw in the interim, and the likelihood of a faulty memory as to the details of the patient's treatment. Additionally, other physicians who follow the patient after surgery or discharge are handicapped if they do not have the complete medical records in their patient's office chart.

14. Include the signed informed consent form in the chart.

After the physician explains the risks and benefits of a procedure, the patient generally signs an informed consent statement. The signed informed consent statement should be included in the patient's chart in the event that the patient later denies consenting to a procedure or being informed of its potential risks and benefits. The progress notes should also include a separate notation by the physician that the risks and benefits of the procedure were discussed with the patient. It is helpful if the most significant risks are specified. For example, when performing a parotidectomy, the chart entry might say: "The risks and benefits of the procedure were discussed with the patient, including the risk of facial nerve injury which would cause post-operative facial dysfunction."

15. If you disagree with a consultant's recommendation, note your opinion and rationale.

A treating physician may disagree with a consultant's recommendation regarding the patient. For example, an internist may disagree with the recommendation of an oncologist to proceed with chemotherapy for a cancer patient. The internist should note his or her reason for arriving at a different conclusion and document the information as presented to the patient, as well as the patient's response and decision as to choice of treatment.

16. Include telephone calls in the chart.

Telephone medical advice or prescription refills must be noted in the chart. For example, if a family practitioner tells a patient to go to the emergency room if the patient's fever persists for 24 hours, the advice should be noted in the patient's chart. If the patient fails to follow the physician's telephone advice, with deleterious consequences, the physician will have a substantiating record. It will not degenerate into a battle between the patient's word against the physician's word. Even telephone calls to the physician's home should be noted on a message pad or dictated into a pocket recorder and later put into the chart.

17. Implement a system whereby important medical information in the chart is not lost nor ignored.

Serious positive findings discovered on consultation should be noted in the chart and also verbally communicated to the primary treating physician as soon as possible. Reports can sometimes be lost. In a case tried in Honolulu in 1987, the patient went to an emergency room complaining of chest pain and shortness of breath. A chest X-ray was appropriately ordered. The X-ray was accurately read by the radiologist, who noted a "left basilar lung density." The radiology report was sent ultimately to the patient's chart, but the information was never directly conveyed to the emergency room doctor, the primary treating physician or the patient. The patient returned to the same emergency room eight months later, with more severe complaints. After a complete workup, he was then diagnosed as having non-resectable lung cancer. The defendants in this suit admitted liability for failure to act on the radiologist's findings. The court awarded the patient's family a judgment in excess of $600,000.

Conclusion

It may be impossible or impractical for a physician to implement *all* of the practices suggested. The extent of implementation will depend upon the number of patients seen by the physician each day, the time allocated for record keeping and the availability of clerical and support staff. Efforts to utilize appropriate suggestions will result in better communication among health-care providers, improved patient care and a more defensible chart in the event of litigation.

(Continued on page 607)

Summary of the Actions of the House of Delegates, October 16, 1988 132nd Annual Meeting — Kailua-Kona, Hawaii, Kona Surf Resorts

Actions Taken on Reports with Recommendations

Report of the President
(James Lumeng)

ADOPTED, the report and its recommendations, by acclamation and with recognition for all his accomplishments realized in maintaining continuity throughout the challenging and unusual hours required during the transition of moving to and establishing the HMA headquarters in the new, fee-simple location.

1. Sports Medicine Committee — recommended that this committee be activated and plan for another sports medicine seminar in 1989. During the past two years, HMA has sponsored successfully an annual sports medicine seminar. The responses from many coaches and trainers were excellent.
2. Continue to build a strong relationship between HMA and other entities such as the University of Hawaii, John A. Burns School of Medicine, Cancer Center, the State Department of Health and other community health organizations.
3. We need to continue to work on membership recruitment and retention. More efforts should be directed to creating greater participation by members of the Association.

Report of the AMA Delegates
(William Iaconetti and Calvin Kam)

ADOPTED, the report and recommendations, with acclamation and expression of appreciation for the efforts involved in keeping the HMA committees and membership informed in a timely fashion of the actions and activities of the AMA. Special recognition was given to Dr. William Iaconetti, whose term ends, for the very fine services given in his performance as HMA's representative and delegate to AMA.

1. The percentage of HMA members who are AMA members should be studied and an effort should be made to increase the AMA membership to almost 100% if possible. With unity, at least a 10% reduction in dues will be available.
2. The Interim 1989 Meeting of the AMA House of Delegates will be held in Honolulu. This meeting should be promoted by the HMA in a timely fashion. This would be an excellent opportunity for all members to see the AMA in action. You have the right to participate in the reference committees. It is recommended that HMA provide a summary of pertinent issues that will be brought up to its members at that meeting.
3. The HMA should sponsor a banquet at the Interim AMA Meeting in 1989. This was successfully done here in December 1984.

Report of the Executive Director
(Jonathan Won)

ADOPTED, the report and recommendations, by acclamation and standing ovation, with special commendation in appreciation of the outstanding services he has performed for the HMA membership, especially this past year.

1. Establish an intensive program of education of HMA members regarding the benefits of membership along with an equally intensive program of recruitment of non-members.
2. Continue to look very critically at the current dues structure to assure that it is reasonable and equitable.
3. Investigate new ideas for the generation of non-dues sources of revenue, including the use of charitable programs.

Commission on Administrative Services

Report of the Treasurer/Finance Committee

A. ADOPTED, the report and recommendations No. 1, 3, and 4:

1. The dues for 1989 remain at $520.
3. The agreement between HMA and the Honolulu County Medical Society for sharing of resources be continued in 1989 at a level of $130,000.
4. The auditors for the HMA for the coming year continue to be the firm of Egami & Ichikawa and that this firm be commended for its excellent service to the HMA.

B. ADOPTED AS AMENDED, recommendation No. 2, the balanced budget for 1989:

The amendment included the additional monies from MIEC in support of the legislative lobbyist, adding $26,000 to $24,000 bringing the subtotal to $50,000 for lobbyist, with $700 for the legislative reception, for a total of $50,700. This was added to line 8 under Revenue-Other reimbursements; and under Expenses, line 17 Committee expenses — $82,800; making a grand total for the 1989 Budget of $889,400.

Commission on Leadership Services

Hawaii Tumor Registry

ADOPTED, the report and its recommendations:

1. HMA continue to support the existence and operation of the HTR.
2. HMA continue to seek additional State of Hawaii funding of HTR activities through the State Department of Health.

Community Research Bureau

ADOPTED, the report and its recommendations:

1. The CRB continue to serve as the eleemosynary arm of the HMA.
2. The "Blue Ribbon" committee be appointed as soon as possible to begin its task.

Commission on Internal Affairs

Publications Committee

ADOPTED, the report and its recommendation:

1. That J.I. Fred Reppun be reappointed as editor of the HAWAII MEDICAL JOURNAL, be commended for his superb work in editing and compiling the Journal and for his many thought-provoking editorials.

Commission on Community, Professional Relations and Peer Review

Report of the Commissioner
(Allan R. Kunimoto)

ADOPTED, the report and its recommendation:

1. To change the title of MD/RN Relations Committee to PHYSICIANS/NURSES RELATIONS COMMITTEE.

(Continued on page 602)

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Beyond the call

Continuing Medical Education Committee

ADOPTED, the report and its recommendation:

1. Continuation of the mandated functions and activities of the Committee.
2. Continuation of the visitation program to institutions and specialty societies.
3. Continued support of involvement in National CME administrative meetings.
4. Stronger encouragement of representation by component institutions and societies at the monthly committee meetings.

Public Relations Committee

ADOPTED, the report and its recommendation:

1. The Public Relations Committee be continued as a standing HMA committee.
2. That the committee be used as a resource to provide information to the community about HMA policy decisions.

Medical, Ethical, Moral and Legal Concerns

ADOPTED, the report and its recommendation:

1. That the committee should continue to monitor Living Will legislation introduced at the Legislature.
2. That physician education regarding the Living Will and related issues should be implemented.
3. The budget request was adopted as shown in the 1989 balanced budget: $600 that would include one trip for one committee member to each of three neighbor islands for Living Will education program; and round-trip airfare for one trip to a committee meeting for one committee member each from Kauai, Maui, and Hawaii.

Physicians Committee

ADOPTED, the report and its recommendation:

1. That this Committee continue to operate on an on-call basis to address physicians impairment problems in the State, including those physicians who are not members of the HMA.
2. That the name of the committee be changed from Physicians Committee to "COMMITTEE ON PHYSICIANS HEALTH."
3. That the Chairman of the committee or his/her delegate continue to attend the annual AMA National Conference on Impaired Health Professionals.
4. Budget Request: Adopted No. 1: Travel funds for the AMA National Conference of the Impaired Health Professional; No. 2: Stipend to help defray costs of providing intervention training to physicians working in the Impaired Physicians' Program was *not adopted* and was not put in the 1989 budget due to lack of supportive documentation or further explanation.

MD/RN Relations Committee

ADOPTED, the report of the Committee and the recommendation from the Reference Committee on Public Health:

1. That this committee report to the House of Delegates in one year regarding the status of the AMA's proposed RCT program.

Infant Care Review Committee, Ad Hoc

ADOPTED, the report and its recommendation:

1. That this ad hoc committee be dissolved.

Commission on Legislation

Legislative Committee

ADOPTED, the report of the committee, and the budget request as amended by the House of Delegates to add an additional $26,000 to the $24,000 budgeted for the lobbyist to bring the total to $50,000, plus the $700 for the legislative reception. The additional monies in support of the lobbyist included a contribution from MIEC.

Commission on Public Health

Chronic Illness and Aging Committee

ADOPTED, the report and its recommendation:

1. It is strongly recommended that this committee continue because the issues of concerns will become even more important in the future.

Substance Abuse Committee

ADOPTED, the report and recommendation Nos. 1, 2, and 4.

1. That the name of the committee be *Alcoholism and other Drug Abuse.*
2. That HMA support expanded educational efforts aimed at physicians, the judiciary, and the public in general.
4. That the committee be continued as a separate entity, not combined with Pharmacy or Environmental factors.

DELETED, recommendation No. 3: That HMA, through its Legislative Committee, strongly support the administrative revocation of license to drive after DUI arrest. This duplication of Resolution No. 7 was not needed.

ADOPTED, the budget request of $1,500 for printing and distribution of educational materials and as seed money for an educational seminar for the judiciary.

Jail Health Committee

ADOPTED, the report and its recommendation:

1. That the committee continue to function as reported.

School Health Committee

FILED, the report and its Budget Request, since this was already in the 1989 Budget:

Two projects scheduled for Adopt-A-School Program relating to health measures: $200.

Toxic Agents Committee

ADOPTED, the report of the Committee.

DID NOT ADOPT, the two budget requests: (1) Acquisition and distribution of educational material for the implementation of the state environmental illness reporting, $500, and (2) seed money for searching for a principal investigator and grants for sugarcane burning epidemiological study, $1,000. These were recommended to be deleted and were not adopted due to lack of supportive documentation.

Commission on Socio-Economics

Report of the Commissioner:
(John H.C. Kim)

ADOPTED, the report of the Commissioner.

Health Care Committee

ADOPTED, the report and its recommendation:

1. The Committee continue to meet regularly to discuss issues that have an impact on health-care costs, maintaining open lines of communication between health-care providers and third-party intermediaries.
2. The HMA and medical community as a whole should develop a program to monitor the State Health Plan and should be familiar with the process of updating the plan to fit with the goals of the Association and the medical profession.
3. Our Association take an active coordinated role in providing professional advisory input to the administration of SHPDA in reviewing certificates of need.

Fee Survey Committee

ADOPTED, the report and the two recommendations; the budget request for $500 was already in the budget and did not require further action.

1. The Committee continue to function as a source of histori-

cal information on prevailing medical fees in the community.
2. The HMA Council inform the Committee of its purpose and/or function for 1988-89, particularly as to whether local state surveys of fees are necessary when a fee schedule is in the process of being developed on a national scale commissioned by the federal government.

Medicare/Medicaid

ADOPTED, the report and its recommendation:
1. Membership of this committee continue as presented.
2. Continue present activities initiating, monitoring and responding to issues concerning Medicare and Medicaid.

Workers' Compensation

ADOPTED, the report and the recommendation contained therein:

That a Workers' Compensation Seminar for the members would be recommended to showcase the many changes that occurred during the past few years.

Health Care Delivery and Financing Systems

ADOPTED, the report of the committee and its two recommendations:
1. The Committee develop an on-going mechanism to maintain liaison with all health-care delivery and financing systems in operation.
2. The Committee pursue the concept of serving as a clearinghouse for all written materials submitted by health-care delivery and financing systems.

Private Health Care Insurers-Subcommittee

ADOPTED, its report and recommendation:
1. The Committee continue to function as liaison between the HMA and all private health-care insurers, preserving the forum for discussion as needed.
2. The Committee continue to meet as needed to address any pertinent issues or problems relating to all private health-care insurers.

All other reports not listed above were filed by the House of Delegates since there were no recommendations or requests that required action.

Actions on Resolutions by the House of Delegates, 132nd Annual Meeting

Resolutions Adopted

Resolution No. 1. RE: Abuse of Anabolic Steroids and Human Growth Hormone

RESOLVED, that the Hawaii Medical Association declare that the prescription of anabolic steroids for the enhancement of athletic ability is entirely inappropriate; and be it further

RESOLVED, that the HMA support the development of State legislation or administrative rules to prohibit use of anabolic steroids for the purpose of enhancing athletic ability; and be it further

RESOLVED, that the HMA continue efforts to educate physicians, sports group administrators, coaches, parents, and athletes on the dangers of abuse of anabolic steroids.

Resolution No. 2 RE: Screening Mammography — Mandatory Insurance Coverage

RESOLVED, that the Hawaii Medical Association support appropriate legislative efforts to enable legislation in the State of Hawaii that will require all insurers operating in the State of Hawaii to provide coverage for screening mammography in accordance with American Cancer Society guidelines.

Resolution No. 3 RE: Medical Malpractice Insurance

RESOLVED, that the House of Delegates, representing the members of the Hawaii Medical Association, direct the Council to explore the possibility of legislation that would mandate the patient and physician, together, to share the cost of the premium on an insurance policy that would protect against the monentary losses resulting from *maloccurrence* — unexpected and unanticipated happenstance or other adverse result of a medical or surgical procedure or treatment — that both patient and doctor had agreed to assume as a considered risk, barring, of course, actual malpractice. (Malpractice, just as mayhem, criminal actions, cheating, wrongdoing of any sort are not and should not be "insurable.")

Resolution No. 4 RE: Interest Charges on Delayed Claims Reimbursements

RESOLVED, that all third-party payers, on any clean claims not reimbursed within 30 days, should have to pay physicians 1½% interest per month; and be it further

RESOLVED, that HMA should seek legislative action to require third-party payers to do this.

Resolution No. 8 RE: Blood Alcohol Level and Driving

RESOLVED, that the Hawaii Medical Association declare that a blood alcohol concentration (BAC) of 0.05% significantly impairs an individual's ability to drive; and be it further

RESOLVED, that HMA supports the development of State legislation that would reduce the per se illegal BAC for driving from 0.10% to 0.05%; and be it further

RESOLVED, that HMA strive to educate physicians and, through them, the general public that driving skills may be significantly impaired at even low levels of BAC.

Resolution No. 11 RE: Notification Partner by HIV Positive Individuals

RESOLVED, that the HMA encourage the physician treating the newly diagnosed HIV-positive persons to raise the issue of protecting partner(s) (sexual or intravenous drug users). Good faith effort should be made to encourage the patient voluntarily to contact his or her partner(s) regarding their risk of infection, how to prevent or reduce transmission of infection, and the availability of appropriate health-care services. If the patient refuses or is unable to inform the partner(s) despite a good faith effort to encourage disclosures; and be it further

RESOLVED, that the HMA support legislation allowing the physician to disclose to partner(s) (sexual or intravenous drug users) of such persons the risk

of HIV infection, how to prevent or reduce the transmission of infection, and the availability of appropriate health-care services, provided that: (1) The physician, in his or her judgment, believes the partner(s) to be unknowingly at risk of infection, and maintains confidentiality of the person's name; and (2) the physician has advised the diagnosed person of intent to disclose the information. The physician may either request the assistance of the Department of Health in partner notification without disclosing the partner's identity, or may have the Department of Health investigators work with the index case to notify the partner(s). Prior to notification of the Department of Health, the physician shall advise the patient of said intent. The physicians and/or the Department of Health shall advise the partner(s) of confidentiality, and remind the partner(s) that they are not at liberty to publicly divulge the information received; and be it further

RESOLVED, that nothing in the legislation should be construed so as to impose upon any physician a duty to inform, warn, or counsel a patient's partner(s) of any positive result of such tests or the risk of HIV infection associated therewith.

Resolutions Amended by the House and Then Adopted

Resolution No. 7 RE: Administrative Revocation of License to Drive

RESOLVED, that the Hawaii Medical Association strongly support the institution of administrative revocation of license to drive at the time of DUI arrest and seek passage of legislation by the 1989 State Legislature that would result in such administrative revocation of license to drive; and be it further

RESOLVED, that the Legislative Committee and lobbyists of HMA be instructed actively to support the passage of such legislation; and be it further

RESOLVED, that HMA strive to educate physicians and the public in general as to the true meaning and anticipated results of administrative revocation of license to drive at the time of DUI arrest.

Resolution No. 9 RE: A Tobacco Free Society by the Year 2000

RESOLVED, that the Hawaii Medical Association join the Surgeon General, the American Cancer Society, the American Heart Association, the American Lung Association, the State of Hawaii Department of Health, and the AMA in advocating the goal of "A Tobacco Free Society By The Year 2000," including support for legislative and regulatory measures as well as voluntary and community efforts.

Resolution No. 13 RE: Improvement in the Quality of Care of the Mentally Ill Patient

RESOLVED, that the Hawaii Medical Association actively support every measure to improve this deplorable situation; and be it further

RESOLVED, that active support from the Hawaii Medical Association be given to the Director of Health, John C. Lewin, MD, to obtain his request for a budget increase of $7 million to $10 million from the Hawaii State Legislature; and be it further

RESOLVED, that the appropriate Hawaii Medical Association committee(s) report regularly to the Hawaii Medical Association Council regarding the improvement of the mental health-care system in the State of Hawaii. (In response to the third Resolved referring to the appropriate committee of HMA, it was further adopted that a separate committee be formed on mental health and that there should be adequate representation on this committee.)

Resolutions No. 6, 12 and 14 were referred to appropriate HMA committees for further review before being submitted to the HMA Council for action.

The three reference Committees for 1988 were appointed as follows:

Miscellaneous Business
Chair, Leonard Howard
Ernest Bade
Helen Percy
Secretary, Angela Rogness

Public Health
Chair, Peter Kim
Paul DeMare
Michael Nichols
Sakae Uehara
Secretary, Cheryl Sugita

Finance & Administration
Chair, Paul Esaki
Denis Fu
John Spangler
Craig Kadooka
Secretary, Marilyn Lindsey

1988 Physician of the Year: The A.H. Robins Award for Community Service was awarded in absentia to Julia Frohlich.

The Results of the Elections for 1988-89 were as follows:

President-Elect	John H.C. Kim
Secretary	Myron E. Shirasu
AMA Delegate	Russell T. Stodd
Alternate AMA Delegates	Allan R. Kunimoto
	John H.C. Kim
Speaker of the House	Richard E. Ando
Vice Speaker of the House	Herbert K.W. Chinn
Councilor from Maui	Helen S. Percy
Councilors from Honolulu	
2-year terms	Alfred M. Arensdorf
	S. Kalani Brady
	Herbert K.W. Chinn
	Martha Lou Hefley
	Wesley K.W. Young
1-year term	Jeanette H.J. Chang

(Continued on page 606)

MRI CASE OF THE MONTH

CENTRAL NASAL SAGITTAL CLEFT

Clinical History: This nine month old female has a central nasal sagittal cleft. No history of meningitis, CSF rhinorrhea, etc..

1



2



These images were produced by MRI Center of the Pacific using their 1.5 Tesla GE Scanner.

Radiologic Diagnosis: Although routine T1-weighted sagittal views appear normal, reduced flip angle T2* weighted images with reduced section thickness[1] reveal a small central subfrontal encephalocele containing gray matter and at least one vascular structure. Transaxial views[2] suggest that this is somewhat more to the right than the left. The patient unfortunately awoke before coronal views could be obtained.

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Resident Physician Delegate..... Lori Inouye-Yamashita
Medical Student Delegate.....Carlos Abeyta

Nominating Committee Members Elected to Serve in 1989 were:
Honolulu.....Henry Fong
Leonard Howard
F. Don Parsa
Myron Shirasu
Stephen Wallach
Kauai..... Peter Kim
Maui..... Paul Hoffman
Hawaii..... Dan Belcher
West Hawaii..... Edwin Gramlich

Sportsmen's Awards were given:
Golf: President's Trophy (low net) and the Robert Miyamoto Perpetual Trophy (low net): Warren Ono, MD.
John Felix Perpetual Trophy (low gross): Ronald Resnick, MD
George Mills Perpetual Trophy or Pharmaceutical Representatives (low net): Wallace Kunimitsu
Women's Golf Winner — Nellie Dang

Tennis:
Men- Gregory Park, MD
James Bendon, MD
Women- Anne Gemmer
Trudy Teshima

10 Kilometer Run: Royal Randolph Jr., MD

Exhibit Drawing-Grand Prize Winner — Gordon Liu, MD

The 132nd annual meeting of the Hawaii Medical Association was honored by the presence of special guests:

Alan R. Nelson, MD, president-elect of the American Medical Association and his wife.

Brian Issell, MD, the new Director of the Cancer Center of Hawaii.

John C. Lewin, MD, Director of Health, State of Hawaii.

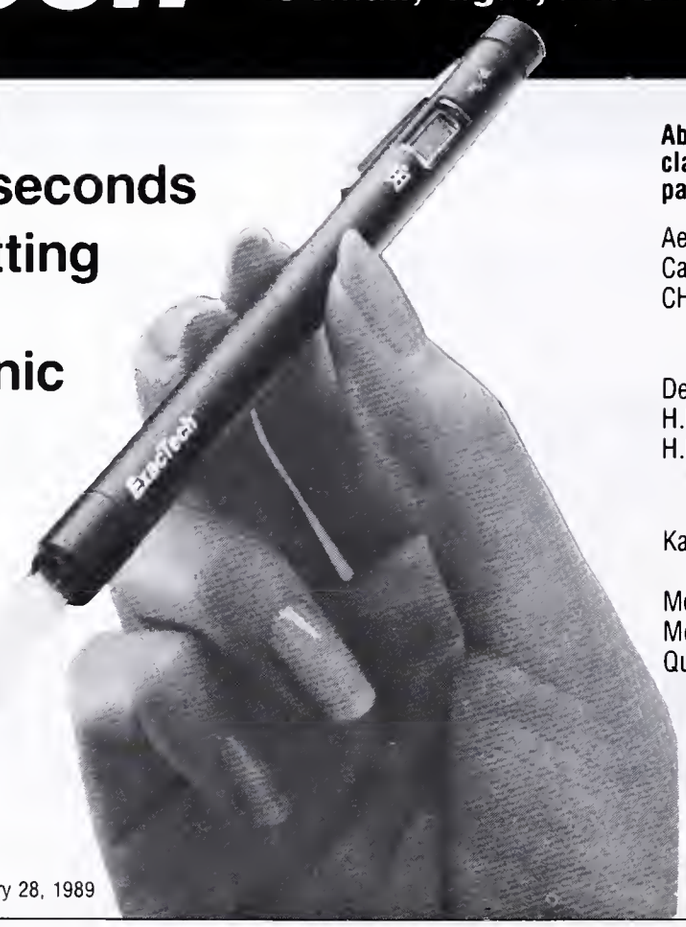
Mr. Bud Wright, Assistant to the Director of the AMA's Division of Medical Society Relations.

Mrs. Norma Skoglund, Secretary of the American Medical Association Auxiliary.

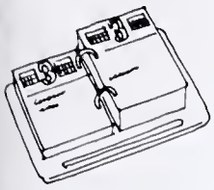
In Memoriam

Stephen R.P. Kalani Brady called for a moment of silence to honor the memory of the following members of HMA who had died since the previous annual meeting:

Philip S. Arthur.....a member for 43 years
Muriel Cass.....55 years
Richard K. Chun.....56 years
Robert J. Emrick.....24 years
Herbert T. Hata.....41 years
Albert K.T. Ho.....39 years
Seiei Inamine.....45 years
Homer M. Izumi.....43 years
Albert C. Johnston.....21 years
George E. Kenessey.....23 years
Hing Biu Luke.....53 years
Thomas Mar.....38 years
Edward T. Matsuoka.....40 years
Kazuo Miyamoto.....48 years
Edwin D. Willett.....36 years

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Kaiser Permanente
Senior Plan
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Continuing Medical Education

The Hawaii Medical Association does not review or evaluate the programs listed in the Hawaii Medical Journal Continuing Medical Education column and assumes no responsibility for educational value, scientific content, changes in agenda or cancellations.

CALENDAR OF ACCREDITED EVENTS—CATEGORY 1

Accredited Programs of CME allow one unit of AMA credit for each hour of instruction excluding all breaks. Some programs also are accredited for AAFP prescribed credit.

LOCAL ACCREDITED PROGRAMS

ONGOING

For a complete list of ongoing programs, please refer to the September 1988 edition of the HAWAII MEDICAL JOURNAL. Further information is available through the individual institutions or through the HMA's CME Department.

SPECIAL EVENTS

All special events should be confirmed with the CME program sponsors, as cancellations are not necessarily reported to the HAWAII MEDICAL JOURNAL.

Jan. 28-Feb. 4, 1989	10th Annual Advances in Clinical Medicine, Practical, Clinical Updates for All Physicians and Surgeons, Physicians Medical Seminars, 800-334-6578. Location: Choice of hotels in Honolulu or Maui.
Jan. 29-Feb. 2, 1989	Focused Seminar: Quality of Care, Estes Park Institute, 800-223-4430. Location: Maui.
Jan. 29-Feb. 3, 1989	Clinical Update in Anesthesiology, Tucson Hospitals Medical Education Program. Contact: Murray G. Atnikov, MD, c/o Box F110-63, Blaine, WA 98230, 604-874-5291. Location: Stouffer's Wailea Beach Resort, Maui.
Feb. 6-10, 1989	Hawaii '89: Fourth Annual Advances in Primary Care, Pacific Institute of Continuing Medical Education and co-sponsored by the Hawaii Medical Association. Contact: Mrs. Valerie Murray, P.O. Box 1059, Koloa, HI 96756, 808-742-7471. Location: Waiohai Resort, Kauai.
Feb. 6-10, 1988	Fourth Annual Cardiovascular Conference at Hawaii, The American College of Cardiology, Program #1673. Contact: Extramural Programs Department, American College of Cardiology, 9111 Old Georgetown Rd., Bethesda, MD 20814. Location: Kohala, Big Island.

FROM THE PRESIDENT *(Continued from page 595)*

manipulated downward, producing further cuts in payment, thereby saving the government substantial sums of money. Could the RBRVS be a concealed form of "a voluntary socialized medicine" package?

Because of more and more government intervention in medicine, because more and more paramedical personnel wish to buy medical licenses through legislation, and because of the increasing number of legislative bills, both in the state and the nation, which may limit or affect our practice of medicine, we must band together to protect our patients and to maintain the high level of health care the people of Hawaii now enjoy. I urge each and every one of you to become involved in organized medicine.

Allan R. Kunimoto, MD
President
Hawaii Medical Association

MEDICAL CHARTS *(Continued from page 599)*

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Reader's Express Their Views

Chow, Ciao, Hsiao . . .

(From "The Weathervane Hawaii Ophthalmological Society Newsletter," Volume 5, Number 8, November 1988. Submitted by Russell T. Stodd.)

The RBRVS

CHOW — A serviceman's breakfast/lunch/dinner

CIAO — An Italian adios, adieu, farewell, see ya

HSIAO — A medical reimbursement hand grenade

The recent meeting of the American Academy of Ophthalmology in Las Vegas was accompanied by an aura of anxiety due to the concurrent release of the Hsiao Study, the Harvard economist's restructuring of physician reimbursement called the Resource-Based Relative Value Scale study, or RBRVS. As all ophthalmologists must be aware by now, we are targeted for a major decrease, and it is assumed that if this study is accepted by Medicare, it will soon be adopted by all third-party carriers. Speaking before the general assumbly on opening day, Dr. Alan Nelson, president-elect of the AMA, delivered a stirring oration. He was interrupted six times by spontaneous applause, and received a standing ovation on conclusion. The gist was that we will have to accept some changes, especially in how we are reimbursed, and that Medicare will no longer give physicians a blank check to fill out. But, he described well that doctors are not stupid, and not poltroons who will roll over and accept whatever is issued. He emphasized unity and the importance of working together, and said that the AAO has a strong political group working in Washington.

Teach Me Good Judgment,
Psalms 119

And on a similar subject, ophthalmology was well represented at the annual meeting of the Hawaii Medical Association in Kona last month. The new president is Allan Kunimoto. Delegates present were Cal Miura, John Druilhet, Jerry Faulkner and Russ Stodd. No momentous issues were on the agenda; the RBRVS was too fresh to be discussed.

Trust Only Those Who Stand to Lose as Much as You When Things Go Wrong.

But, now the RBRVS has been presented to representatives of various Hawaii state specialty groups to provide input for a special meeting sponsored by the AMA, November 15 in Chicago. While many physicians state with precise examples, why they believe that the study has serious flaws, and these are mostly procedure-oriented practitioners, the Hawaii Society of Internal Medicine, the Academy of Family Practice, and allegedly the pediatric group, are in vigorous support. This is not surprising since the American Society of Internal Medicine (ASIM) has been pushing for a revised fee schedule for at least seven years. Quite obviously, the possibility of severe disagreement among physicians is paramount, and therefore the AMA is desperately trying to head off internal bloodletting. The American College of Radiology (ACR) has already abandoned ship: It wrote its own RVS and submitted it for approval by Congress, working around both the RBRVS group and the AMA. The ACR's motivation was that the RBRVS was so poorly done it would place them in an ugly reimbursement straightjacket. A local spokesman suggested that every specialty group should go its own way, lest it falls victim to an ill-constructed fee schedule with no latitude for change. At the present time, the AMA position is so liquid that Assoc. EVP James Todd says it is almost water. Should the AAO negotiate directly and abandon our colleagues as the radiologists have done? Should each area of practice grasp desperately for territory, and devil take the hindmost? Or, should doctors stick together as a body, and attempt to establish a more equitable system for allocation of third-party funds?

Social Legislation Cannot Repeal Physical Laws

Government medical planners are looking to the Canadian socialized system as a pattern for the USA. However, it is a system in constant tension; at present the British Columbia Medical Association is poised poised to strike over compulsory arbitration, the Alberta Medical Association is in court over the government's breach of contract, and the Saskatchewan Medical Association is in court over capping, to mention only the obvious problems. And in Great Britain, where medical expenditures are proportionately the least in western nations, quality problems are severe because of a lack of properly qualified doctors, and there is no such thing as peer review.

A Man Between Two Lawyers is Like a Fish Between Two Cats

The state of Florida has been one of the most besieged by trial attorneys, with malpractice premiums soaring off the board. So, Florida physicians have a war chest of $6 million, and through the efforts of referendum (not allowed by our "enlightened" legislature), placed a constitutional amendment on the ballot capping non-economic damages in all civil suits at $100,000. They have succeeded in getting broad support: The Boy and Girl Scouts, banks, grocers, businesses, even the baseball umpires association. Supposedly, over two-thirds of Florida's voters are in support of the measure. The Academy of Florida Trial Lawyers admits it is running behind, but that ultimately people will vote down this "lawyer hate stuff." The ad campaign is expected to cost physicians $750,000 a week till election day. Physicians were assessed $500 each, and some contributed much more. This is big money, to be sure, but still not that much when one considers the skyrocketing premiums.

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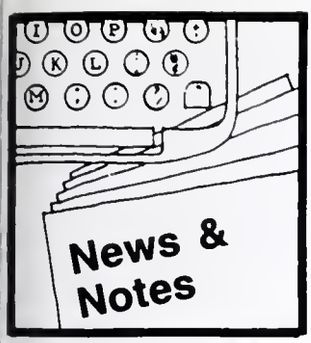
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HENRY YOKOYAMA, MD

Fred Reppun, MD
Editor, Hawaii Medical Journal

Dear Fred:

I wish to share with your readers these "true and unpublished" incidents that occurred recently while I was doing physicals on police recruits.

It is no secret that the young men abhor the rectal exam that is part of the physical. I can hear the waiting applicants discuss nothing else and I always do the rectal last. One day recently, after the exam, the applicant, standing there with shorts down around his ankles, asked, "Is that all, Doc?" I replied caustically, "Yes, when I finish the rectal, I feel I have reached the end."

The tables were turned one day last week. Usually after the rectal, and before doing the Hemoccult, I hand the applicant a box of Kleenex to wipe himself. This particular day, the box of rubber gloves was next to the Kleenex box. I inadvertently gave him the box of gloves. Before I could say anything, the applicant looked up after examining the box and asked innocently, "Does this mean I'm gonna get a chance to get even?" I could only shake my head and shudder slightly . . . To this day I have not figured out whether the applicant was dead serious or had a sense of humor warped like mine. . . .

Sincerely,
Lawrence H. Winter, MD

(Ed.: Dear Larry, please forgive our extensive editing)

Life in These Parts I

"If you're confused about the yen-dollar exchange, you're not alone . . . Gerald Faulkner says one of his patients from Japan, an 86-year-old master calligrapher named Taiun Yanagida, was surprised when he got his bill for a second cataract operation. 'Why is it,' asked Yanagida innocently, 'that it cost me twice as much five years ago?' " (From "Hawaii" by Dave Donnelly, Honolulu Star-Bulletin).

"Might keep this in mind when you pick out your next bathing suit: Researchers now say mosquitoes avoid yellows, oranges and whites." (From "Just Checking" by Lou Boyd, The Honolulu Advertiser).

Jeremiah Kalahiki Jr., 23, Hawaii's youngest and latest heart transplant patient, checked out of St. Francis Medical Center in September, one month post-transplant, saying, "I want to enjoy all the time I got." After spending most of his 16 months of married life in hospitals, Jeremiah said he was looking forward to a honeymoon that was still not finished. Jeremiah had been hospitalized for nearly 11 months with viral cardiomyopathy and received the heart of 19-year-old Kamehameha School athlete and graduate James Ferrigno, who died in a traffic accident.

Hillhaven Corp. of Tacoma, Washington, which owns and operates 375 nursing homes on the mainland, is building its first Hawaii project near Kona on the Big Island. Hillhaven is the second-largest nursing home operator behind Beverly Enterprises, Inc., of Pasadena. The $3 million, 60-bed skilled nursing facility will be called the Hillhaven-Kona Healthcare Center and is scheduled for completion in spring.

The son of an 89-year-old semi-invalid woman patient called at 10:30 p.m. "My mother has been shaking for 15 minutes," he said. A quick review of symptoms failed to elicit any other symptoms and she had been well at suppertime. We advised, "Watch her and if she continues to shake, take her to the ER." Two hours later the ER physician called, "Your patient has a temp. of 105." The ambulance attendant had also been fooled by the paucity of symptoms and had written: "Presumptive diagnosis: Epilepsy." We fortunately felt a rigid abdomen and a tense gall bladder . . . The reluctant surgeon whom we called operated at 2 a.m. and noted: "Acute gangrenous cholecystitis."

We were curious about the splashy transparent watercolors of local lifestyles by an N.R. Kelly displayed in the HMA offices. We learned that N.R. was a pediatrician in Waianae who enjoyed painting its people and scenes. . . .

Physicians Speak Up

In September when opinions on then-Sen. Dan Quayle's military record were still rife, our HMJ editor, J.I. Frederick Reppun, wrote: "However, in my opinion, the issue is not whether vice presidential candidate Dan Quayle stayed out of going to Vietnam by entering the National Guard — which was not a dishonorable tactic — to avoid participating in a non-popular, no-win, far-from-our-shores war. The issue is Quayle's honesty.

"If Quayle, like a great many other young men of draft age then, admitted now that he was opposed to the Vietnam war then, but elected to serve his country nevertheless in an acceptable and proper military way, no one today would criticize him.

"Quayle could even square it with the conservative far right by stating that he has a right to change his mind, after he saw what he thought was 'the light.' "

Elected, Appointed & Honored

The Hawaii Pacific Gerontological Society recently gave Nalima Kokua Awards for unique contributions to elders, the image of aging or the field of gerontology. Patricia Blanchette, geriatrician, won the research/teaching award for building a strong geriatric education program for Hawaii and the Pacific Islands. Betsy Weiner, staff psychiatrist with the state Department of Mental Health Division, received the government award for supporting the elderly and their care givers.

Julia A. Frohlich, president of the Blood Bank of Hawaii, was named the "1988 Communicator of the Year" by the Hawaii chapter of the International Association of Business Communicators. Julia was named the "HMA Physician of the Year" during the 132nd Annual Meeting in Kailua-Kona.

Helen Petrovitch is president-elect of the American Heart Association, Hawaii affiliate. Robert Kulani Childs, Jeffrey Lau, Neal Shikuma and Terry Shintani were elected to the Board of Directors.

Capable Allan Kunimoto was installed as president of the Hawaii Medical Association at the 132nd Annual Meeting in October. Outgoing president is James Lumeng, who is to be congratulated for a job well done. . . .

"Jack Scaff is apparently the first person from Hawaii to be invited to judge the World Championship Chili Cook-off at Tropico Goldmine, Calif." (From Don Chapman, The Honolulu Advertiser, Oct. 26)

Life in These Parts II

Siavii Siavii, a 64-year-old American Samoan, may be the first transplant patient in the state to be the recipient of his own tissue donation. Siavii, his left eye blind from an earlier accident, had a donated cornea transplant of his right eye three years ago. Several months ago, the transplanted cornea was rejected and Siavii was blind again. Ophthalmologist Jorge Camara, who had performed the first surgery, suggested transplanting the

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unscarred cornea from Siavii's blind left eye to avoid the rejection phenomenon. Teams from Straub and the St. Francis Medical Center successfully performed the 3½-hour procedure at QMC and gave Siavii a prosthetic left eye as well.

Orthopod Allen Richardson, chairman of the sports medicine committee for U.S. Swimming, feels that the practice of using performance-enhancing drugs often goes beyond the boundaries of intellect. "This had been a surprise to me as a physician that a certain number are going to use them no matter how risky."

The Governor's Committee on AIDS changed its initial stand on not to distribute sterile needles to intravenous drug users. Marian Melish, professor of pediatrics at KMCWC, pointed out that five babies in Hawaii already have AIDS because their mothers used drugs with contaminated needles. "Next year there will be 25 babies and 50 babies the next. . . . The problem will keep escalating unless the state intervenes. . . . Nationally 80% of AIDS cases are transmitted through addicts sharing dirty needles."

The same committee did not back down from their position that condoms be distributed to prisoners despite objections from Kim Marie Thorburn, medical director for the state Department of Corrections. Kim points out that sexual conduct is illegal in Hawaii prisons and that issuing condoms in prisons will create an unmanageable situation. Besides, the condoms could be used to carry contraband.

Ed Dierdoff, Kailua physician, feels that the city must stop polluting Kailua Bay. "The waiver application proposed by the City & County of Honolulu for the Kailua Regional Wastewater Treatment Plants, now before the EPA for decision, should be denied because inadvertently treated sewage will be a hazard to our Windward beaches. . . . Lanikai is my home. . . . I swim, paddle and dive in these waters. . . . The tradewinds create an offshore breeze toward the shore. . . . Discarded material over a mile off shore arrives on the beach in a matter of an hour or so. . . . The Windward beaches are a delicate natural resource and a gift. . . . We must preserve that gift!. . . I demand that our effluent be sufficiently treated so that it presents no aesthetic or medical threat to our community."

Yoshitsugi Hokama, pathology professor at the UH School of Medicine, has received a patent for a simple ciguatera test that may be available to fishermen by spring. He tips a probe (usually a bamboo stick) with Liquid Paper. When the probe is inserted in the flesh, it absorbs a sample of the fish's body fluid, which can then be dipped into a succession of chemicals including a solution with antibodies from mouse cell cultures. The antibodies react to the toxin. . . . Yoshitsugi has conducted tests on over 300 ulua and kahala, roughly half of which were declared non-toxic. Ninety-eight percent of tests of fish suspected in ciguatera outbreaks are positive for toxin. Given the high incidence of positive tests, the number of people actually getting ill from ciguatera are fortunately surprisingly small. . . . The state Health Department recorded fewer than 127 cases from 1983 to 1985, though 404 people were involved.

Sportsmen

Murphy's Laws of Golf by Ed West

Law of Universal Good: Every shot, good or bad, pleases someone. (Ed.: Especially the bad ones.)

The Skill Rule: Everyone is an expert at analyzing your game.

Waylon's Warning: Playing in a best ball tournament with your spouse will probably lead to divorce.

The Tournament Axiom: In any tournament play, your best shots occur only after you've lost all chance of winning.

Buckner's Law: A strong front nine assures a disastrous back nine.

ICI Conference Notes

(Conference on Zovirax at the Kahala Hilton last August)

Re: Incidence of Herpes Genitalia: 30% of ages 18 to 40 are seropositive . . . 20% have overt symptoms; 40% have minor symptoms; and 40% are asymptomatic. . .

- Zovirax is effective in primary and recurrent Herpes Genitalia. . .
- "HSV-1 has gone South . . . So now, Herpes Genitalia is 50:50 HSV-1 and HSV-2. . ."
- "Before Zovirax, patients were treated with a long measure of tincture of sympathy."
- Joke: "One patient got sick on holy water . . ." "I didn't know you were supposed to drink it."
- Zovirax dose: 200mg 5 times a day for 5 days.
- Suppression therapy for immunosuppressed and HIV patients: 200mg bid for 6 months.
- Zovirax for Herpes Zoster: Ophthalmologist use 800mg bid for zoster of the ophthalmic division.

Jokes from Medicine's Funny Bone: The Anatomy of Coping

(From Medical World News, July 14, 1986)

An old psychiatrist and a young psychiatrist leave the office together at the end of a long day. The older man is dapper and has not a hair out of place. The young doctor is totally unkempt and frazzled. "How can you be in such great shape after a whole day of listening to people spill out their deepest, most gut-wrenching problems?" the young guy asks. "So who listens?" replies the veteran. . . .

☆ ☆ ☆

Doctor: Tell me, sir, are there any diseases that run in your family?

Patient: Well, my grandaddy died of cerebral hemorrhoids and my grandma died of smilin' mighty Jesus. My sister has sick-as-hell anemia. My aunt has the gouch; she's got fireballs of the Eucharist. And then my father has high blood, mother has low blood, and like I said, I got bad blood.

☆ ☆ ☆

A surgeon, an internist and a family physician go duck hunting. The surgeon sees a

duck, shouts "Duck!" and shoots it down. The internist sees a duck, shouts "Duck! Rule out quail! Rule out pheasant!" and shoots it down. The family physician sees a duck and blasts it out of the sky with a burst of machine gun fire. As the tattered carcass falls to the ground, he remarks, "I don't know what the hell it is, but I sure got it!"

☆ ☆ ☆

Surgeons do it. Internists talk about it. Radiologists just look at the pictures.

☆ ☆ ☆

Principles of dermatology: If it's wet, dry it. If it's dry, wet it. If neither of these works, use steroids. If steroids don't work, do a biopsy.

☆ ☆ ☆

Patients come to ophthalmologists about their eyes, but also for other things. This woman came into my office and looked around to make sure no one was listening. She said, "I really am here about my eyes, but I have another problem maybe you could help with. I have terrible trouble holding my water. What do you advise?" "I advise you to get off my carpet."

☆ ☆ ☆

Two psychiatrists meet on the street. One says to the other, "You're fine. How am I?"

☆ ☆ ☆

If you're up to your ass in alligators, it's hard to remember that your initial objective was to drain the swamp. (The saying inspired a group of 100 internists to form the Ancient and Elliptical Order of Alligators. . . . Members sport tiny alligator pins in their lapels. A good sense of humor is a prerequisite for election and new alligators are inducted annually at the American Society of Internal Medicine meetings.)

Miscellany

"What does your father do?"
"Oh, he's a dentist."
"How about your dad?"
"He's an attorney."
"Honest?"
"No, just like the rest."
As told by Clay Benham, our tennis-playing friend).

☆ ☆ ☆

An usher noticed a man stretched across three seats in the movie theater. . . . "Sir, you are allowed only one seat." The man groaned, but did not budge. . . . "Sir, I'll have to call the manager." The manager made several unsuccessful attempts to move the fellow, then called the police. The cop asked the reclining man, "All right . . . What's your name?" The man mumbled, "Joe . . ." "And where are you from, Joe?" "The balcony."



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Over the Editor's Desk

STEPHEN R.P.K. BRADY, MD

PHYSICIAN EXECUTIVE MANAGEMENT CENTER OFFERING SCHOLARSHIP PROGRAM—TAMPA, Florida—The Physician Executive Management Center (PEMC), a physician counseling, placement and recruitment firm, will award a scholarship valued at $1,900 to a physician who is considering a management career to attend its October 8-13, 1989, **The Physician in Transition** program. This unique program provides physicians and their spouses the opportunity to explore personal, life, and career goals, assess skills and preferences, and develop career and life strategic plans. It will be conducted by The Menninger Foundation and the PEMC in cooperation with the American College of Physician Executives.

The Physician in Transition program, now in its fifth year, is designed for physicians who are considering a change in their career roles and need to be aware of the critical elements that affect a career decision. Robert Conroy, MD, director of the Will Menninger Center for Applied Behavioral Sciences at The Menninger Foundation, and one of the program's faculty members said that, "Physician participants come away with a clearer idea of what they stand for, where they are headed, and what they think is important." Recent seminar participant Charles E. Sampson, MD, of Jackson, Mississippi, believes the seminar was the most valuable experience he has ever had. "I gained a thorough understanding of the process of career change and its effect on me and my family. It helped my wife and me realize the importance of life-work planning."

The program is conducted by the professional faculty at The Menninger Foundation and held on its campus in Topeka, Kansas. The award includes a full week's tuition to attend the October program plus five nights' lodging and all meals. Nominations, which can include self nominations, should include a letter describing the nominee's background, training and current situation plus how the nominee will benefit from the program. This information should be sent to PEMC, 4830 West Kennedy Boulevard, Suite 648, Tampa, Florida 33609, no later than January 31, 1989. The scholarship winner will be announced by March 1, 1989.

ST. FRANCIS MEDICAL PLAZA-WEST—A significant milestone in the 62-year history of St. Francis Medical Center was reached with the opening of St. Francis Medical Plaza-West in Ewa. The three-story, 38,000-square-foot building completes the first-phase construction of a major medical complex in West Oahu.

"The office building represents a major commitment of the Sisters of St. Francis to the people of Hawaii. It is a visible restatement of our pledge to reach out to all those who are in need of care," said Sister M. Aileen Griffin, president of the St. Francis Healthcare System and chief executive officer of St. Francis Medical Center.

Construction continues on a new 136-bed hospital that will be housed in a five-story tower with 116,000 square feet under its roof. The facilities include a 12-bed intensive care unit, 28-bed obstetrics/gynecology unit, 96 medical-surgical beds, 24-hour emergency care, ambulatory servies, laboratory, pharmacy, occupational therapy, physical therapy, respiratory therapy, among others.

The long-term plan includes construction of a medical education center, day-care facilities and wellness center, as well as expansion of the hospital and medical office building facilities.

The primary service area for the hospital represents some 30 percent of Oahu's population.

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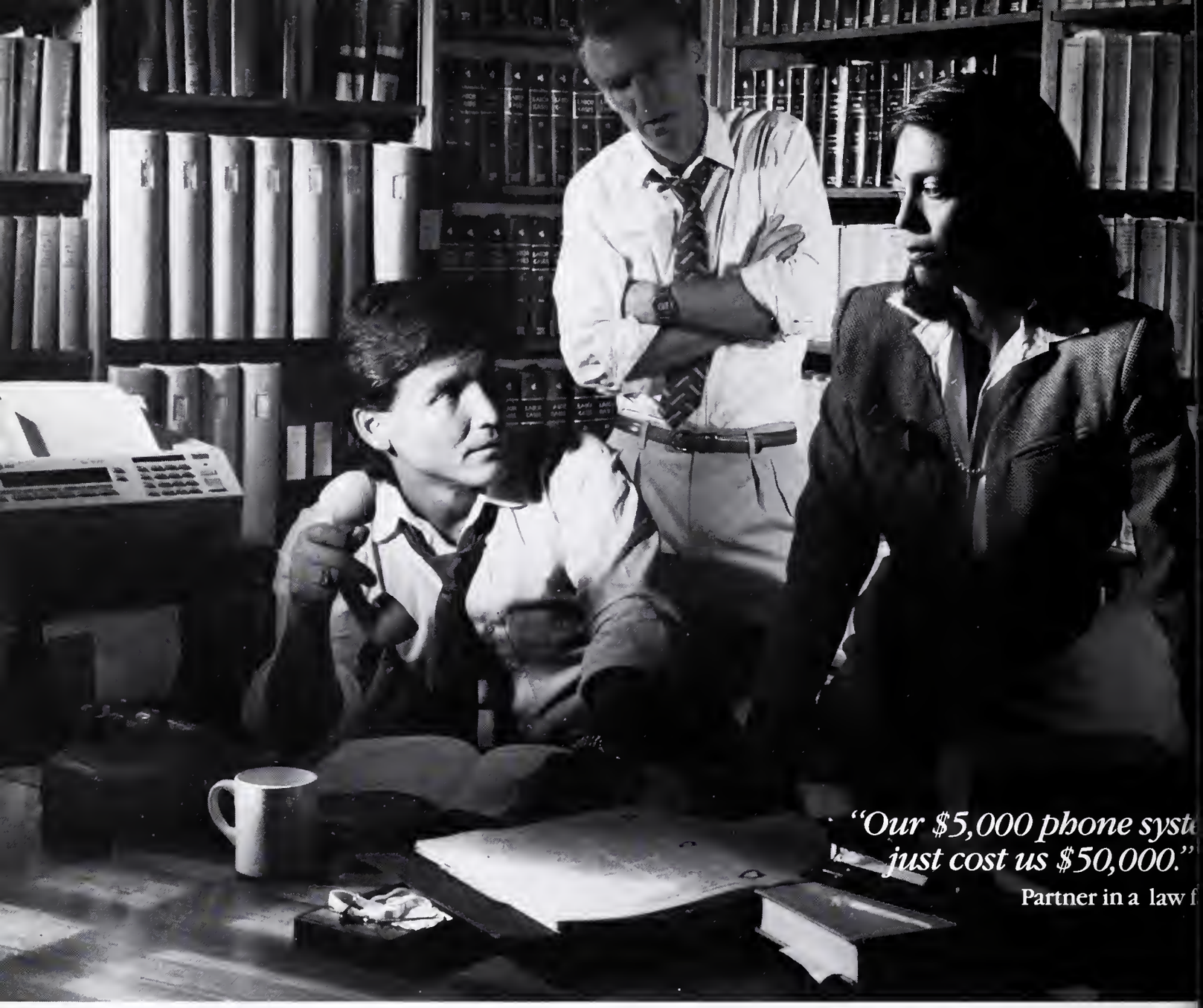
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Warnings: *Angioedema* Angioedema of the face, extremities, lips, tongue, glottis, and/or larynx has been reported in patients treated with ACE inhibitors, including VASOTEC In such cases, VASOTEC should be promptly discontinued and the patient carefully observed until the swelling disappears. In instances where swelling has been confined to the face and lips, the condition has generally resolved without treatment, although antihistamines have been useful in relieving symptoms. Angioedema associated with laryngeal edema may be fatal **Where there is involvement of the tongue, glottis, or larynx likely to cause airway obstruction, appropriate therapy, e.g., subcutaneous epinephrine solution 1:1000 (0.3 mL to 0.5 mL), should be promptly administered.** (See ADVERSE REACTIONS.)

Hypotension. Excessive hypotension is rare in uncomplicated hypertensive patients treated with VASOTEC alone. Heart failure patients given VASOTEC commonly have some reduction in blood pressure, especially with the first dose, but discontinuation of therapy for continuing symptomatic hypotension usually is not necessary when dosing instructions are followed, caution should be observed when initiating therapy (See OOSAGE AND ADMINISTRATION) Patients at risk for excessive hypotension, sometimes associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death, include those with the following conditions or characteristics: heart failure, hyponatremia, high-dose diuretic therapy, recent intensive diuresis or increase in diuretic dose, renal dialysis, or severe volume and/or salt depletion of any etiology. It may be advisable to eliminate the diuretic (except in heart failure patients), reduce the diuretic dose, or increase salt intake cautiously before initiating therapy with VASOTEC in patients at risk for excessive hypotension who are able to tolerate such adjustments. (See PRECAUTIONS, *Drug Interactions* and AOVERSE REACTIONS) In patients at risk for excessive hypotension, therapy should be started under very close medical supervision and such patients should be followed closely for the first two weeks of treatment and whenever the dose of enalapril and/or diuretic is increased. Similar considerations may apply to patients with ischemic heart disease or cardiovascular disease in whom an excessive fall in blood pressure could result in a myocardial infarction or cerebrovascular accident If excessive hypotension occurs, the patient should be placed in supine position and, if necessary, receive an intravenous infusion of normal saline. A transient hypotensive response is not a contraindication to further doses of VASOTEC, which usually can be given without difficulty once the blood pressure has stabilized If symptomatic hypotension develops, a dose reduction or discontinuation of VASOTEC or concomitant diuretic may be necessary.

Neutropenia/Agranulocytosis. Another ACE inhibitor, captopril, has been shown to cause agranulocytosis and bone marrow depression, rarely in uncomplicated patients but more frequently in patients with renal impairment, especially if they also have a collagen vascular disease Available data from clinical trials of enalapril are insufficient to show that enalapril does not cause agranulocytosis at similar rates Foreign marketing experience has revealed several cases of neutropenia or agranulocytosis in which a causal relationship to enalapril cannot be excluded Periodic monitoring of white blood cell counts in patients with collagen vascular disease and renal disease should be considered

Precautions: *General: Impaired Renal Function:* As a consequence of inhibiting the renin-angiotensin-aidosterone system, changes in renal function may be anticipated in susceptible individuals. In patients with severe heart failure whose renal function may depend on the activity of the renin-angiotensin-aldosterone system, treatment with ACE inhibitors, including VASOTEC, may be associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death.

In clinical studies in hypertensive patients with unilateral or bilateral renal artery stenosis, increases in blood urea nitrogen and serum creatinine were observed in 20% of patients These increases were almost always reversible upon discontinuation of enalapril and/or diuretic therapy In such patients, renal function should be monitored during the first few weeks of therapy

Some patients with hypertension or heart failure with no apparent preexisting renal vascular disease have developed increases in blood urea and serum creatinine, usually minor and transient, especially when VASOTEC has been given concomitantly with a diuretic. This is more likely to occur in patients with preexisting renal impairment. Oosage reduction and/or discontinuation of the diuretic and/or VASOTEC may be required.

Evaluation of patients with hypertension or heart failure should always include assessment of renal function. (See OOSAGE AND ADMINISTRATION)

Hyperkalemia: Elevated serum potassium (> 5.7 mEq/L) was observed in approximately 1% of hypertensive patients in clinical trials In most cases these were isolated values which resolved despite continued therapy Hyperkalemia was a cause of discontinuation of therapy in 0.28% of hypertensive patients. In clinical trials in heart failure, hyperkalemia was observed in 3.8% of patients, but was not a cause for discontinuation

Risk factors for the development of hyperkalemia include renal insufficiency, diabetes mellitus, and the concomitant use of potassium-sparing diuretics, potassium supplements, and/or potassium-containing salt substitutes, which should be used cautiously, if at all, with VASOTEC (See *Drug Interactions.*)

Surgery/Anesthesia In patients undergoing major surgery or during anesthesia with agents that produce hypotension, enalapril may block angiotensin II formation secondary to compensatory renin release. If hypotension occurs and is considered to be due to this mechanism, if can be corrected by volume expansion

Information for Patients:

Angioedema. Angioedema, including laryngeal edema, may occur especially following the first dose of enalapril. Patients should be so advised and told to report immediately any signs or symptoms suggesting angioedema (swelling of face, extremities, eyes, lips, tongue, difficulty in swallowing or breathing) and to take no more drug until they have consulted with the prescribing physician

Hypotension: Patients should be cautioned to report lightheadedness especially during the first few days of therapy If actual syncope occurs, the patients should be told to discontinue the drug until they have consulted with the prescribing physician.

All patients should be cautioned that excessive perspiration and dehydration may lead to an excessive fall in blood pressure because of reduction in fluid volume. Other causes of volume depletion such as vomiting or diarrhea may also lead to a fall in blood pressure; patients should be advised to consult with the physician.

Hyperkalemia Patients should be told not to use salt substitutes containing potassium without consulting their physician.

Neutropenia Patients should be told to report promptly any indication of infection (e.g., sore throat, fever) which may be a sign of neutropenia

NOTE: As with many other drugs, certain advice to patients being treated with enalapril is warranted This information is intended to aid in the safe and effective use of this medication. It is not a disclosure of all possible adverse or intended effects.

Drug Interactions.

Hypotension: Patients on Diuretic Therapy: Patients on diuretics and especially those in whom diuretic therapy was recently instituted may occasionally experience an excessive reduction of blood pressure after initiation of therapy with enalapril. The possibility of hypotensive effects with enalapril can be minimized by either discontinuing the diuretic or increasing the salt intake prior to initiation of treatment with enalapril. If it is necessary to continue the diuretic, provide close medical supervision after the initial dose for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and OOSAGE AND ADMINISTRATION)

Agents Causing Renin Release: The antihypertensive effect of VASOTEC is augmented by antihypertensive agents that cause renin release (e.g., diuretics).

Other Cardiovascular Agents: VASOTEC has been used concomitantly with beta-adrenergic-blocking agents, methyldopa, nitrates, calcium-blocking agents, hydralazine, prazosin, and digoxin without evidence of clinically significant adverse interactions.

Agents Increasing Serum Potassium: VASOTEC attenuates potassium loss caused by thiazide-type diuretics. Potassium-sparing diuretics (e.g., spironolactone, triamterene, or amiloride), potassium supplements, or potassium-containing salt substitutes may lead to significant increases in serum potassium Therefore, if concomitant use of these agents is indicated because of demonstrated hypokalemia, they should be used with caution and with frequent monitoring of serum potassium. Potassium-sparing agents should generally not be used in patients with heart failure receiving VASOTEC.

Lithium: A few cases of lithium toxicity have been reported in patients receiving concomitant VASOTEC and lithium and were reversible upon discontinuation of both drugs Although a causal relationship has not been established, it is recommended that caution be exercised when lithium is used concomitantly with VASOTEC and serum lithium levels should be monitored frequently

Pregnancy—Category C. There was no tetotoxicity or teratogenicity in rats treated with up to 200 mg/kg/day of enalapril (333 times the maximum human dose). Fetotoxicity, expressed as a decrease in average fetal weight, occurred in rats given 1200 mg/kg/day of enalapril but did not occur when these animals were supplemented with saline Enalapril was not teratogenic in rabbits. However, maternal and fetal toxicity occurred in some rabbits at doses of 1 mg/kg/day or more Saline supplementation prevented the maternal and fetal toxicity seen at doses of 3 and 10 mg/kg/day, but not at 30 mg/kg/day (50 times the maximum human dose)

Radioactivity was found to cross the placenta following administration of labeled enalapril to pregnant hamsters.

There are no adequate and well-controlled studies in pregnant women. VASOTEC® (Enalapril Maleate, MSD) should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers. Milk in lactating rats contains radioactivity following administration of ^{14}C enalapril maleate. It is not known whether this drug is secreted in human milk Because many drugs are secreted in human milk, caution should be exercised when VASOTEC is given to a nursing mother.

Pediatric Use. Safety and effectiveness in children have not been established

Adverse Reactions: VASOTEC has been evaluated for safety in more than 10,000 patients, including over 1000 patients treated for one year or more VASOTEC has been found to be generally well tolerated in controlled clinical trials involving 2987 patients.

Hypertension: The most frequent clinical adverse experiences in controlled trials were: headache (5.2%), dizziness (4.3%), and fatigue (3%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in controlled clinical trials were: diarrhea (1.4%), nausea (1.4%), rash (1.4%), cough (1.3%), orthostatic effects (1.2%), and asthenia (1.1%).

Heart Failure. The most frequent clinical adverse experiences in both controlled and uncontrolled trials were: dizziness (7.9%), hypotension (6.7%), orthostatic effects (2.2%), syncope (2.2%), cough (2.2%), chest pain (2.1%), and diarrhea (2.1%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in both controlled and uncontrolled clinical trials were: fatigue (1.8%), headache (1.8%), abdominal pain (1.6%), asthenia (1.6%), orthostatic hypotension (1.6%), vertigo (1.6%), angina pectoris (1.5%), nausea (1.3%), vomiting (1.3%), bronchitis (1.3%), dyspnea (1.3%), urinary tract infection (1.3%), rash (1.3%), and myocardial infarction (1.2%).

Other serious clinical adverse experiences occurring since the drug was marketed or adverse experiences occurring in 0.5% to 1% of patients with hypertension or heart failure in clinical trials in order of decreasing severity within each category

Cardiovascular: Myocardial infarction or cerebrovascular accident, possibly secondary to excessive hypotension in high-risk patients (see WARNINGS, *Hypotension*), cardiac arrest, pulmonary embolism and infarction, rhythm disturbances; atrial fibrillation, palpitation.

Digestive. Ileus, pancreatitis, hepatitis or cholestatic jaundice, melena, anorexia, dyspepsia, constipation, glossitis.

Nervous/Psychiatric: Depression, confusion, ataxia, somnolence, insomnia, nervousness, paresthesia

Urogenital: Renal failure, oliguria, renal dysfunction (see PRECAUTIONS and OOSAGE ANO AOMINISTRATION), prostate hypertrophy

Respiratory: Bronchospasm, rhinorrhea, asthma, upper respiratory infection

Skin: Herpes zoster, pruritus, alopecia, flushing, photosensitivity

Other Muscle cramps, hyperhidrosis, impotence, blurred vision, taste alteration, tinnitus

A symptom complex has been reported which may include fever, myalgia, and arthralgia, an elevated erythrocyte sedimentation rate may be present. Rash or other dermatologic manifestations may occur. These symptoms have disappeared after discontinuation of therapy

Angioedema: Angioedema has been reported in patients receiving VASOTEC (0.2%) Angioedema associated with laryngeal edema may be fatal If angioedema of the face, extremities, lips, tongue, glottis, and/or larynx occurs, treatment with VASOTEC should be discontinued and appropriate therapy instituted immediately (See WARNINGS.)

Hypotension. In the hypertensive patients, hypotension occurred in 0.9% and syncope occurred in 0.5% of patients following the initial dose or during extended therapy Hypotension or syncope was a cause for discontinuation of therapy in 0.1% of hypertensive patients In heart failure patients, hypotension occurred in 6.7% and syncope occurred in 2.2% of patients Hypotension or syncope was a cause for discontinuation of therapy in 1.9% of patients with heart failure. (See WARNINGS.)

Clinical Laboratory Test Findings:

Serum Electrolytes. Hyperkalemia (see PRECAUTIONS), hyponatremia

Creatinine, Blood Urea Nitrogen. In controlled clinical trials, minor increases in blood urea nitrogen and serum creatinine, reversible upon discontinuation of therapy, were observed in about 0.2% of patients with essential hypertension treated with VASOTEC alone. Increases are more likely to occur in patients receiving concomitant diuretics or in patients with renal artery stenosis (See PRECAUTIONS.) In patients with heart failure who were also receiving diuretics with or without digitalis, increases in blood urea nitrogen or serum creatinine, usually reversible upon discontinuation of VASOTEC and/or other concomitant diuretic therapy, were observed in about 11% of patients. Increases in blood urea nitrogen or creatinine were a cause for discontinuation in 1.2% of patients.

Hemoglobin and Hematocrit: Small decreases in hemoglobin and hematocrit (mean decreases of approximately 0.3 g % and 1.0 vol %, respectively) occur frequently in either hypertension or heart failure patients treated with VASOTEC but are rarely of clinical importance unless another cause of anemia coexists In clinical trials, less than 0.1% of patients discontinued therapy due to anemia

Other (Causal Relationship Unknown) In marketing experience, rare cases of neutropenia, thrombocytopenia, and bone marrow depression have been reported

Liver Function Tests. Elevations of liver enzymes and/or serum bilirubin have occurred

Dosage and Administration: *Hypertension:* In patients who are currently being treated with a diuretic, symptomatic hypotension occasionally may occur following the initial dose of VASOTEC The diuretic should, if possible, be discontinued for two to three days before beginning therapy with VASOTEC to reduce the likelihood of hypotension. (See WARNINGS) If the patient's blood pressure is not controlled with VASOTEC alone, diuretic therapy may be resumed.

If the diuretic cannot be discontinued, an initial dose of 2.5 mg should be used under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions*)

The recommended initial dose in patients not on diuretics is 5 mg once a day Dosage should be adjusted according to blood pressure response The usual dosage range is 10 to 40 mg per day administered in a single dose or in two divided doses In some patients treated once daily, the antihypertensive effect may diminish toward the end of the dosing interval In such patients, an increase in dosage or twice-daily administration should be considered. If blood pressure is not controlled with VASOTEC alone, a diuretic may be added

Concomitant administration of VASOTEC with potassium supplements, potassium salt substitutes, or potassium-sparing diuretics may lead to increases of serum potassium (see PRECAUTIONS)

Dosage Adjustment in Hypertensive Patients with Renal Impairment The usual dose of enalapril is recommended for patients with a creatinine clearance >30 mL/min (serum creatinine of up to approximately 3 mg/dL). For patients with creatinine clearance ≤30 mL/min (serum creatinine ≥3 mg/dL), the first dose is 2.5 mg once daily. The dosage may be titrated upward until blood pressure is controlled or to a maximum of 40 mg daily

Heart Failure: VASOTEC is indicated as adjunctive therapy with diuretics and digitalis. The recommended starting dose is 2.5 mg once or twice daily After the initial dose of VASOTEC, the patient should be observed under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions.*) It possible, the dose of the diuretic should be reduced, which may diminish the likelihood of hypotension. The appearance of hypotension after the initial dose of VASOTEC does not preclude subsequent careful dose titration with the drug, following effective management of the hypotension. The usual therapeutic dosing range for the treatment of heart failure is 5 to 20 mg daily given in two divided doses. The maximum daily dose is 40 mg. Once-daily dosing has been effective in a controlled study, but nearly all patients in this study were given 40 mg, the maximum recommended daily dose, and there has been much more experience with twice-daily dosing. In addition, in a placebo-controlled study which demonstrated reduced mortality in patients with severe heart failure (NYHA Class IV), patients were treated with 2.5 to 40 mg per day of VASOTEC, almost always administered in two divided doses. (See CLINICAL PHARMACOLOGY, *Pharmacodynamics and Clinical Effects*) Dosage may be adjusted depending upon clinical or hemodynamic response. (See WARNINGS.)

Dosage Adjustment in Heart Failure Patients with Renal Impairment or Hyponatremia In heart failure patients with hyponatremia (serum sodium <130 mEq/L) or with serum creatinine >1.6 mg/dL, therapy should be initiated at 2.5 mg daily under close medical supervision. (See DOSAGE AND AOMINISTRATION, *Heart Failure,* WARNINGS, and PRECAUTIONS, *Drug Interactions.*) The dose may be increased to 2.5 mg b.i.d., then 5 mg b.i.d. and higher as needed, usually at intervals of four days or more, if at the time of dosage adjustment there is not excessive hypotension or significant deterioration of renal function. The maximum daily dose is 40 mg

For more detailed information, consult your MSD representative or see Prescribing Information. Merck Sharp & Dohme, Division of Merck & Co., Inc., West Point, PA 19486. J6VS18R(815)

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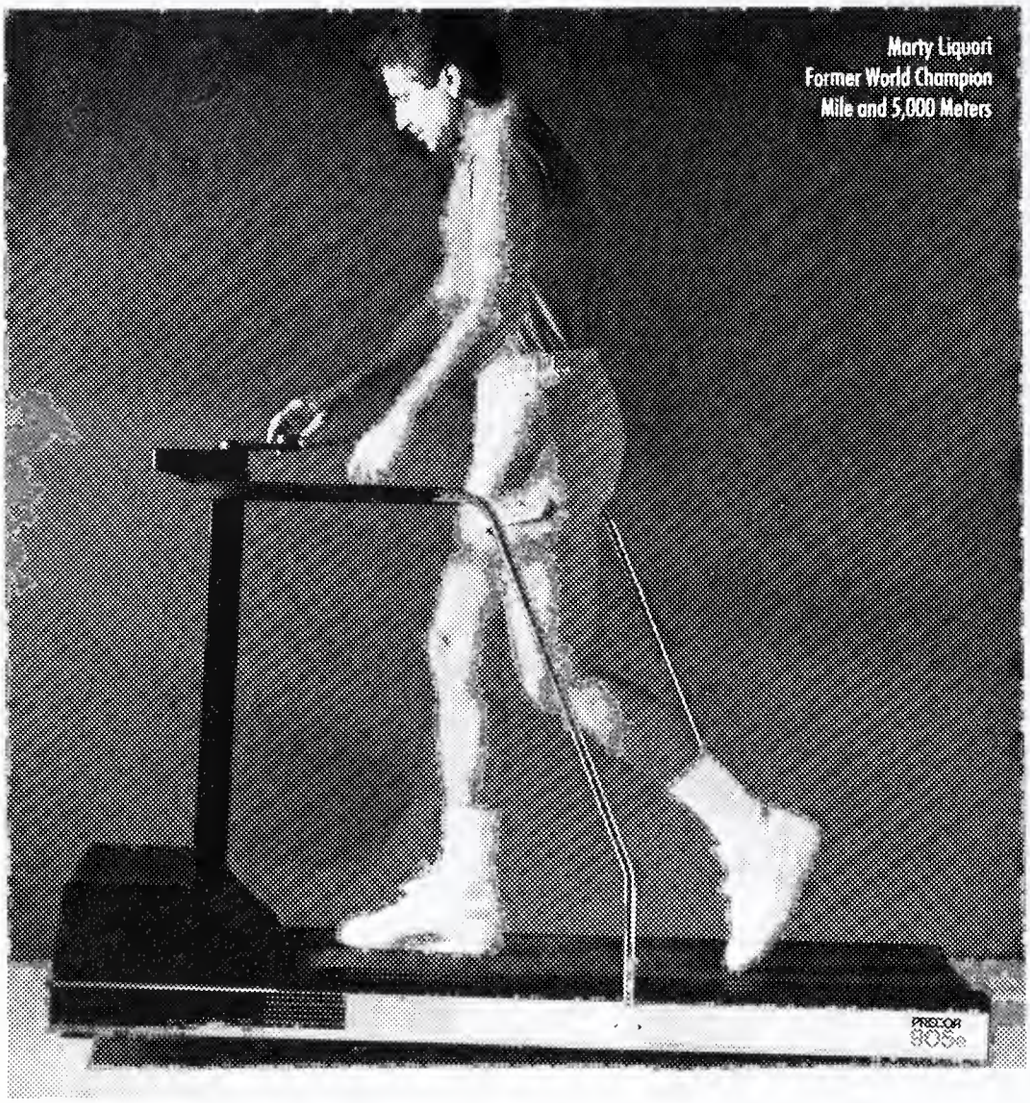
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ESSAY

Common diagnostic tests: Use and interpretation

Bernard W.D. Fong, MD*

"Common Diagnostic Tests, Use and Interpretation" by Harold C. Sox, editor, was published in 1987 by The American College of Physicians. The appendix itself is 40 pages long and summarizes the preceding 326 pages of text, without including, however, the many caveats or detailed explanations and exceptions present in the text proper.

The textbook is the product of a joint venture with National Blue Cross and Blue Shield and the American College of Physicians and encompasses a period of clinical investigation from the late 1970s to the mid-1980s. The bibliography contains 57 references, one from 1985, four from 1984, and 34 from 1962 through 1980.

It is my perception as a practicing physician, a peer review physician, and as a consultant in many medical-legal reviews, that the standard of practice in Hawaii in 1988 is higher than the standards recommended in the appendix as submitted. I believe that many factors have contributed to this rise in standards. These include better and more highly trained physicians; a tremendous increase in technological capabilities so that physicians are more able to interrupt the natural course of a disease both at an earlier and at a later stage of a critical illness bringing about a complete reversal or at least a significant slowing of the pathophysiology of what at one time was usually a terminal illness; a whole host of new drugs which are highly effective but which in themselves have far reaching metabolic and physiologic side-effects which require frequent monitoring to prevent an iatrogenic, drug-related, hosptial admission for a life-threatening complication or complications; the trend among most physicians to try to treat seriously-ill patients at home and only requesting hospitalization when such efforts are ineffective; and finally, the increasing trend to earlier hospital discharge of complicated and seriously-ill patients.

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All of these factors have heightened the physician's awareness of the need for frequent and careful monitoring of his patients. No longer is a careful history and physical examination sufficient to determine at an early stage the presence of serious illness or a significant, acute, drug toxicity. The physician must turn to sophisticated and complex testing early and frequently to detect the first subtle changes indicating that a serious problem is developing. This more careful monitoring has, in turn, raised the standard of care for our community, resulting in better medical care for our citizens, a goal which I believe we and third party payers share in common.

It is apparent that the practice of medicine has become increasingly more sophisticated and complex, so that it is impossible for any guideline to address really adequately, or to be used as a menu or recipe in the adjudication and payment of, insurance claims. The text book clearly states both in the preface by the editor, the text itself in many and repeated instances, and in the appendix written by Lawrence C. Morris, Senior Vice President, Health Benefits Management, Blue Cross and Blue Shield Association, that the information and recommendations in the book are "to help in determining appropriate care — and not intended to be — a series of proscriptions."

In a similar vein, John R. Ball, Executive Vice-President of The American College of Physicians, on October 14, 1987 in a letter to Mr. Morris, requested that Mr. Morris reiterate to National Blue Cross and Blue Shield and its member. organizations his statement that "the program is not an effort to deny claims — the imponderables of medical practice being such that payment policy can never anticipate all contingencies; but that the carrier should provide exception processes through which those unusual circumstances can be recognized and accommodated."

I would strongly urge that any implementation not in conformity with these principles be delayed until such time that appropriate input can be obtained either directly from physicians who provide primary care or through

(Continued on page 9)



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Tort Reform

Our Medical Coalition for Tort Reform is being restructured, according to Chairman Neal Winn, who reported on it at the HMA Council meeting on 6 January 1989.

The Council has accepted the guidelines proposed by the Hawaii Federation of Physicians and Dentists (the Council of the Hawaii Chapter, American Academy of Family Physicians also has done so) but HMA's formal approval awaits implementation.

The general idea expressed at a recent meeting of the Coalition's executive committee was to structure a working body of three representatives each from ACOG, HFPD and HMA, supplemented by the chairmen of its standing committees. Provision will also be made for representation from the various specialty societies interested in joining the Coalition.

This will require HMA's counsel, Vernon Woo, Esquire, to rewrite the certificate of incorporation and the by-laws.

It was decided to approach Mr. Wayne Yamasaki to be the Coalition's lobbyist for 1989, and he has accepted at the remuneration proposed. Mr. Yamasaki is the former Director of Transportation in the Ariyoshi administration and comes well recommended.

One staff person from Senator Matsuura's office will be hired and an office and phone will be set up at the public relations firm of Stryker and Weiner, where Yamasaki already has a facility. The PR firm will be given a short term contract to help put across the Coalition's intent on tort reform, not only to the general public (our patients) but the physicians, many of whom still need to be encouraged to support the Coalition and continue to help fund its activities.

This, then, will take the coalition out from under the wings of HMA and will establish it as a separate entity, separate from too much dominance by any one of its three components.

Neal Winn reported on some new and interesting information revealed at the Coalition's meeting by Senator Matsuura and Ann Kobayashi. The latter reported on what's happening in Florida and in Virginia, where the idea of a "no fault" or a "fault/no fault" concept has surfaced, involving participation by the general public in paying a share of the medical liability insurance premium. This has been an outcome of the issue of liability in the cases of brain-damaged newborns — based on increasing scientific evidence that damage occurs well before actual delivery and may not be consequent to the trauma of birth.

The reader is encouraged to digest the article by AMA President-elect Nelson in this issue. He addressed the HMA's House of Delegates in Kona in October, 1988 on the subject of tort reform.

J.I. Frederick Reppun, MD
Editor

DIAGNOSTIC TESTS

(Continued from page 7)

their respective specialty organizations.

In closing, I would like to share with you a vignette. As a member of the audience in a Senior Citizen meeting called to discuss helath insurance, State agency representatives, invited as speakers to discuss health insurance and how to make proper use of such insurance, were asked during the question and answer period how to get denied services paid. Interestingly, both of the speakers suggested that should third party payments be denied or paid at too low a level, and further inquiry to the carrier prove unsatisfactory, claimants should seek redress by asking assistance from either the Insurance Commissioner or the Consumer Protection Agency and not by complaining to their physicians!

I hope that this kind of militant consumer action will never have to come about, since neither physicians nor third party payers can afford the repercussions of such action.

Robert J. Emrick, MD
1924 - 1988

Beloved Kauai physician Bob Emrick died on October 8. His wife of 34 years, Madeleine, wrote the following at their home, Honua Farm in Kalaheo, the next day, addressing it to his many friends.

—The Editor

Bob died last night, free at last of the misery of the last few months. One friend said, "I was crazy about Bob." So was I. And, I know we were many.

It was less than five months since the diagnosis was made, cancer (of the kidney) already so far advanced that he elected to forgo the usual treatment modalities, except for one attempt at a new protocol that proved for him to be too shattering to continue; and a brief course of radiation to a specific area of pain that appeared to have little effect.

Bob was from a coal-mining section of Ohio, the youngest of nine children growing up in the Great Depression years. Those years had a lasting impression on Bob; ever after, he was a stalwart supporter of Franklin Roosevelt's strong leadership of the New Deal. The only one of the family to go to college, he attended Ohio University in Athens, Ohio. He worked his way through at many jobs including short-order cook, a bookkeeper for a beauty shop chain and a transcript typist and court reporter.

We were married in 1954 in Columbus, Ohio. Bob became inspired to enter medical school at Ohio State University, graduating in 1957. I had been living in Honolulu, working at the YMCA and attending classes at the University of Hawaii when, on that fateful day of December 7, 1941, I was called with other Oahuans to Queen's Hospital to donate blood. Remembering that brief experience, I suggested to Bob that he apply for an internship at Queen's. So that is how we came to Hawaii in 1957.

Following internship, there was a temporary sugar plantation practice on the Big Island. We spent over a year there, mostly at Laupahoehoe. A brief interlude in public health in Honolulu came next, before the decision was made to go on to specialty training.

Bob began pathology in Binghampton, New York, and ended up with his last two years at the renowned Mallory Institute of Pathology at Boston City Hospital. However, he never regretted having had the experience of plantation practice, feeling that it had contributed much to his later work in pathology. I remember how, when we had returned to a primarily Caucasian environment on the mainland, Bob would complain that people "looked sick." He was especially delighted with the ethnic variety of the children in Hawaii.

In the course of scouting for a job after finishing his training, he contacted people he had known in pathology in Honolulu. When it came to his attention that there was a spot for a resident pathologist at Wilcox Memorial Hospital at Lihue, he jumped at it "sight unseen" in August 1964. Neither of us had been to Kauai before. Bob's main concern at his new post was the isolation from other pathologists and specialists. Perhaps that was the motivating factor in his working with others in organizing the Kauai Medical Group, which came into being in 1968. Bob Emrick was one of its pathologists until his illness forced his retirement earlier this year.

During the months of his last illness we enjoyed a closeness that was precious, watching the days' endings from the lanai overlooking our farm, driving to Salt Pond, our favorite beach, early Sunday mornings for ritual observance of the sea, including a swim for as long as it was possible for Bob to do so. We had valued moments with friends; and there were innumerable visits with those colleagues of the Kauai Medical Group who cared so much for him, sometimes even to the neglect of their own private lives.

It was devastating for me and for the others to be witness to the physical deterioration of this special man, accompanied by his bouts of depression and the assault on his spirit. But his sense of humor never totally deserted him. Bad times were made tolerable and even laughable, the result of his wit and flair for the dramatic when he was not above bulldozing his way onto center stage. In the middle of one night he swaggered out to the piano and demanded "the Mozart book"; whereupon he briefly embarked on one of the sonatas that he had not touched for years. In the stillness of that night I kept wondering which of our neighbors would suddenly awake to the sound of Mozart!

Bob's ashes have been scattered over the landscape he loved to contemplate. Life must go on — with one less farmhand to help with the weeding and planting he used to do so meticulously, on occasions that were the respite from the demands of his professional life.

Bob always had literary gems at the tip of his tongue or his pen. Among his favorites was Shakespeare's *Sonnet #30:*

When to the sessions of sweet silent thought
I summon up remembrance of things past,
I sigh the lack of many a thing I sought,
And with old woes new wail my dear time's waste:
Then can I drown an eye, unus'd to flow,
For precious friends hid in death's dateless night,

And weep afresh love's long since cancell'd woe,
And moan the expense of many a vanish'd sight:
Then can I grieve at grievances foregone,
And heavily from woe to woe tell o'er
The sad account of fore-bemoaned moan,
Which I new pay as if not paid before.
But if the while I think on thee, dear friend,
All losses are restor'd and sorrows end.

David Elpern, MD, dermatologist with the KMG, and a very close friend of Robert Emrick, participated at the family service held on October 15. We excerpt and paraphrase a bit from the eulogy he titled "King Lear," which voiced a sentience of unusual closeness between medical colleagues.

—The Editor

It's been a week now. We're coming to terms with the loss of our good friend — Robert, Bob, Bobby Emrick. Each of us is really unknown to the rest of mankind, even to one's most intimate companions. All we see of others, I fear, are incomplete pieces of the puzzle. . . . We can describe but fragments of the person whose memory we are gathered to honor, the person whose passing was a blessing to him and a respite from the tortures of Hades.

Bob was a close friend these past 14 years; he and Al Ley interviewed me in 1974 for the job I now hold with the Kauai Medical Group. . . . Bob always listened . . . was always interested in my career . . . and in my personal life and family. . . . Here, in this outpost, most of our families are far away. . . . Bob treated me as a beloved son, and I him as a revered father.

He was a good man, never a phony, not one to compromise his principles. . . . At times, the path he walked at our hospital was a lonely one . . . loneliness is the price of honesty.

We all know Bob was a great reader. . . . In his last days he turned more and more to poetry . . . he realized, he saw clearly, as Wordsworth put it: "The poet binds together, by passion and knowledge, the vast empire of human society". . . . Bob understood the poets' emotions in a way few of us ever will; and they gave him more surcease from pain than did morphine.

In his very last days, Bob reminded me of King Lear who, toward his own end, after the storm, beaten down physically and mentally, awoke to find his beloved Cordelia at his bedside. She asks: "How fares Your Majesty?" Lear's reply harkens me back to a week ago: "You do me wrong to take me out of the grave. Thou art a soul in bliss; but I am bound upon a wheel of fire, that mine own tears do scald like molten lead."

There are two quotations I would like to cite; one is of this century, from Wales, the land of poets; the other out of China, the birthplace of philosophy, in the 6th Century BC:

Do Not Go Gentle into
That Good Night

Do not go gentle into that good night,
Old age should burn and rave at close of day;
Rage, rage against the dying of the light.
Though wise men at their end know dark is right,
Because their words had forked no lightning they
Do not go gentle into that good night.
Good men, the last wave by, crying now bright
Their frail deeds might have danced in a green bay,
Rage, rage against the dying of the light.
Wild men who caught and sang the sun in flight,
And learn, too late, they grieved it on its way,
Do not go gentle into that good night.
Grave men, near death, who see with blinding sight
Blind eyes could blaze like meteors and be gay,
Rage, rage against the dying of the light.
And you, my father, there on the sad height,
Curse, bless, me now with your fierce tears, I pray.
Do not go gentle into that good night.
Rage, rage against the dying of the light.

—Dylan Thomas

Knowing others is wisdom;
Knowing the self is enlightenment.
Mastering others requires force;
Mastering the self needs strength.
He who knows he has enough is rich.
Perseverance is a sign of will power.
He who stays where he is endures.
To die but not to perish is to be eternally present.

Transsphenoidal Surgery for Pituitary Tumors

M.W. Nicholson, MD*
G. Doo, MD**
W. Schroffner, MD***

The primary aim of surgery for tumors of the pituitary gland is to remove the tumor, correct the overproduction of pituitary hormone and preserve the normal functioning of the gland.

The classical intracranial approach to the pituitary gland is often successful in removal of the tumor, but, unfortunately, it usually results in removal of the normal part of the pituitary gland as well, and a loss of normal function.

The transsphenoidal approach to the pituitary gland was first used in the early 1900s by Schloffer and by Cushing, but the technique was abandoned because of poor visualization and limited access to the gland. With the introduction of the operating microscope and the C-arm intraoperative fluoroscope, the procedure has had a resurgence. Dr. Jules Hardy, a neurological surgeon in Canada, developed microinstruments and refined the technique for the transsphenoidal approach to the pituitary gland.

This approach is safe and carries a low morbidity and mortality. Initially, it was felt to be appropriate for microadenomas of the pituitary gland, but as a result of experience, the approach has been used for larger pituitary tumors, including even those with suprasellar extension.

All of our cases were done at The Queen's Medical Center in Honolulu and have been a joint procedure by an ENT surgeon, G. Doo, MD, and a neurological surgeon, M.W. Nicholson, MD.

Under general anesthesia, the ENT surgeon makes a sublabial incision in order to access to the nasal septum. A submucosal dissection is then carried out, deflecting the cartilaginous portion of the septum to one side and resecting the bony septum in order to gain access to the sphenoid sinus.

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1380 Lusitana St., Suite 1012
Honolulu, Hawaii 96813

During this procedure, a self-retaining, intranasal Hardy retractor is utilized with an operating microscope and a C-arm intraoperative fluoroscope. After adequate exposure of the posterior wall of the sphenoid sinus is obtained, the neurosurgeon takes over. (Fig. 7-16)

The neurosurgeon, utilizing the magnification of the operating microscope, opens the posterior wall of the sinus and after removal of adequate bone, the dura is opened by making a cruciate incision. Increased magnification is used to explore the pituitary gland, and if an obvious tumor is noted, this is incised and removed using suction and various microcurettes. If the tumor is not obvious, then an incision is made into the gland at the location determined by the preoperative CT-scan. The tumors are often soft or semi-liquid in the middle, and the wall is more solid. This is then removed with the curettes, and after an apparently total removal, the tumor cavity is packed with Gelfoam soaked in absolute alcohol. These Pledgets are later removed and the area is irrigated with sterile saline. A piece of the nasal cartilage is placed across the floor of the sella, and the nasal structures are replaced in the midline. The sublabial incision is closed with interrupted catgut sutures, and the nares are packed with gauze.

(Continued)

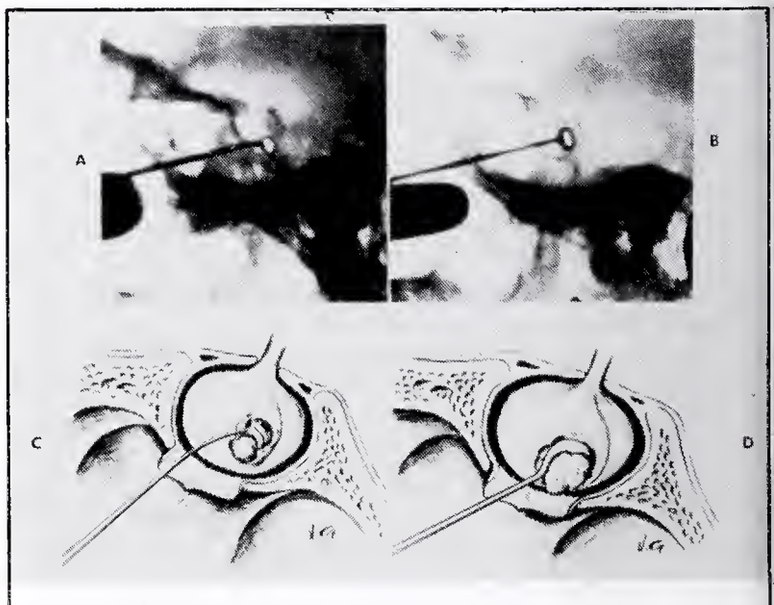


Fig. 7-16. A and **B**, Fluoroscopic view during surgery of the location of the ring curette in the posteroinferior area of the sella turcica where the prolactin microadenomas are found **C** and **D**. Schematic drawing illustrating the removal of the microadenoma.

(Continued on page 15)

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Contraindication: Known allergy to cephalosporins
Warnings: CECLOR SHOULD BE ADMINISTERED CAUTIOUSLY TO PENICILLIN-SENSITIVE PATIENTS. PENICILLINS AND CEPHALOSPORINS SHOW PARTIAL CROSS-ALLERGENICITY. POSSIBLE REACTIONS INCLUDE ANAPHYLAXIS.

Administer cautiously to allergic patients.

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics. It must be considered in differential diagnosis of antibiotic-associated diarrhea. Colon flora is altered by broad-spectrum antibiotic treatment, possibly resulting in antibiotic-associated colitis.

Precautions:
- Discontinue Ceclor in the event of allergic reactions to it.
- Prolonged use may result in overgrowth of nonsusceptible organisms.
- Positive direct Coombs' tests have been reported during treatment with cephalosporins.
- Ceclor should be administered with caution in the presence of markedly impaired renal function. Although dosage adjustments in moderate to severe renal impairment are usually not required, careful clinical observation and laboratory studies should be made.
- Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.
- Safety and effectiveness have not been determined in pregnancy, lactation, and infants less than one month old. Ceclor penetrates mother's milk. Exercise caution in prescribing for these patients.

Adverse Reactions: (percentage of patients)

Therapy-related adverse reactions are uncommon. Those reported include:
- Gastrointestinal (mostly diarrhea) 2.5%
- Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment.
- Hypersensitivity reactions (including morbilliform eruptions, pruritus, urticaria, and serum-sickness-like reactions that have included erythema multiforme [rarely, Stevens-Johnson syndrome] and toxic epidermal necrolysis or the above skin manifestations accompanied by arthritis/arthralgia, and frequently, fever) 1.5%; usually subside within a few days after cessation of therapy. Serum-sickness-like reactions have been reported more frequently in children than in adults and have usually occurred during or following a second course of therapy with Ceclor. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.
- Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.
- As with some penicillins and some other cephalosporins, transient hepatitis and cholestatic jaundice have been reported rarely.
- Rarely, reversible hyperactivity, nervousness, insomnia, confusion, hypertonia, dizziness, and somnolence have been reported.
- Other: eosinophilia, 2%; genital pruritus or vaginitis, less than 1%, and, rarely, thrombocytopenia.

Abnormalities in laboratory results of uncertain etiology
- Slight elevations in hepatic enzymes
- Transient fluctuations in leukocyte count (especially in infants and children)
- Abnormal urinalysis, elevations in BUN or serum creatinine
- Positive direct Coombs' test.
- False-positive tests for urinary glucose with Benedict's or Fehling's solution and Clinitest® tablets but not with Tes-Tape® (glucose enzymatic test strip, Lilly). [061088L]

Additional information available from Eli Lilly and Company, Indianapolis, Indiana 46285. PV 2351 AMP

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TRANSSPHENOIDAL SURGERY

(Continued)

The gauze is removed on the third postoperative day. The patients are usually discharged on the fifth or sixth postoperative day. Transient diabetes insipidus of three to six days duration occurs frequently due to manipulation of the posterior pituitary gland during surgery. No long-term diabetes insipidus occurred in our series of patients.

Procedure

Our series consists of 23 patients. Of these, 19 were women and four were men. Twenty-one had micro-adenomas. The youngest patient was 22 years old and the oldest 52. One patient had a pituitary gland ablation for treatment of metastatic breast cancer. One man had a macroadenoma with the tumor extending above the optic chiasm.

Indication

The most common indication for this operation was the presence of a prolactin secreting adenoma. The occurence of amenorrhea and galctorrhea in association with an elevated prolactin level characterizes a prolactinoma. These tumors are usually small and will often initially respond to treatment with bromocriptine. In our series, two patients postoperatively have successfully become pregnant and delivered normal babies.

Complications

Complications listed were: death 0, neurological deficit 0, visual deficit 0, rhinorrhea 1, infection 0.

In our series, there was one major complication, and that was in a patient who had a persistent cerebrospinal fluid leak. This required a re-operation to place a fat graft and Surgicel across the bone defect in the sella. Postoperatively, the rhinorrhea did not recur, and the patient did well. This compares very favorably with other series that have reported transient cerebrospinal fluid leaks occuring with an incidence of 8.5%.

Conclusion

It is our experience that the transsphenoidal approach to pituitary gland tumors is a well established, highly successful operation with a low complication rate.

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Professional liability: Let's try something new

Alan R. Nelson, MD*

(A speech presented at the 132nd annual meeting of the House of Delegates of the Hawaii Medical Association)

President-elect Alan R. Nelson, MD, of the AMA graced the 132nd annual meeting of the House of Delegates in Kona in October 1988 and addressed the House. He was persuaded to allow the JOURNAL to publish his remarks, whereupon he promptly gave us his "notes," from which we have freely put together the following. Dr. Nelson's representation of the intent of the American Medical Association's "new" approach to the resolution of the problem of Medical Mal-Practice Insurance excited a considerable interest on the part of the delegates. We like the new term: Professional Liability.

—The Editor

Ladies and gentlemen: Thank you for inviting me here today, I appreciate this opportunity to explain to you an alternative approach to resolving the medical malpractice dispute — the AMA's Administrative Model that goes beyond Tort Reform.

You already know that in January this year the AMA and 32 medical specialty societies announced a fault-based, administrative alternative to the civil justice system.

Let me update you on what that system is like and where it's going.

The tort system has inflicted some truly outrageous pain and suffering awards on may physicians.

1. It has jacked up the cost of insurance so high that it's affecting the practices of most physicians, truly devastating many of the high-risk specialties and interfering with patient access to health care.

2. It siphons off so much money in running the system — including attorney fees — that only 40 cents on the dollar ends up in the pockets of those claimants who win malpractice suits in the courts.

3. It causes billions of dollars to be wasted on defensive medicine, in the form of unnecessary tests and procedures.

4. It is causing many physicians to restrict their practices, or to retire early.

5. And finally, this crisis is turning many young physicians away from certain specialties, and even influencing them about *where* they want to practice.

With the possible exception of certain trial lawyers, I don't know of anyone who doesn't agree that the tort system is *not* the best way of resolving malpractice disputes, of discouraging claims that have no merit and of reducing the cost of claims. The system is inefficient, the process is lengthy and the results are erratic. Some injured patients recover nothing, some receive less than fair compensation and some recover amounts far in excess of their actual losses. Large portions of the award depend on subjective and emotional considerations. There is evidence that a significant number of potential claims are never brought into the civil justice system. If the injury is relatively small and the prospects for a large recovery are not great, attorneys often will not take on the case; some patients are represented by inadequate or incompetent counsel and fail to recover for legitimate claims.

Given all these flaws, society pays a high cost in operating this unsatisfactory system.

The AMA/specialties proposal would take medical liability claims out of the courts altogether and place them in the hands of a state administrative body — either an enhanced state medical board or a completely new state agency.

Unlike juries — which often have difficulty evaluating the testimony of conflicting experts — this system features specialized hearing officers who will be skilled at deciding medical liability disputes. So, we can expect more consistency in resolving true malpractice cases. In addition, we could expect tremendous time savings under an administrative system. The present civil justice system is a slow and costly method of dispute resolution. The appeals process can extend a case for years. In contrast, the administrative system could settle claims within a few months; and with less of the heartbreak and humiliation that even an innocent physician may experience as a result of the coverage in the press.

Over the years, we've recognized these various deficiencies of the justice system; and for more than a decade we've been making minor adjustments here and there. We will continue to support tort reform efforts both at the state and national levels, but these minor adjustments haven't solved the problem. We need to try a completely new system, and that's what the AMA and the specialty societies have come up with.

Our proposal includes a pre-hearing claim review process — formal hearings before a hearing examiner, and, if called for, full appellate review by a panel of the administrative agency's board. Beyond that, limited review in the courts is possible.

(Continued on page 33)

*President-elect, American Medical Association.

Dollars & Cars

An Informative Look at Hawaii's Auto Industry



A Crossroads Press Special Advertising Section for Pacific Business News,
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ZEN AND THE ART OF CAR BUYING

By Beth Busch

We're all familiar with the stereotypical car salesman: the loud plaid jacket, the big smile and the continuous sales pitch. The guy who's going to make you an offer you can't refuse. Unfortunately, the stereotype has persisted, even though very few car salesman today fall into that category. In fact, most of the salesmen you'll encounter in Hawaii sport aloha shirts and are both genuine and helpful.

So why does the myth persist? The fact is, a car is the only item we purchase today that does not have a set price, thus making necessary the art of negotiation. I've had several opportunities to study this phenomenon and have come to believe that the desire to enter into negotiations for a car — and to emerge victorious — is, in men, innate. It's not so much getting a good deal, although that's important, too. It's the thrill of the chase. Men *like* making car deals. It's in their blood. And if you don't believe me, try this:

(If you're a woman, you can do this yourself. Men will have to find a female to act the part.) Engage a group of men in conversation and announce your intention to trade or purchase a car. Immediately, you will be bombarded with questions concerning the particulars: How many *miles* are on your car? You didn't already *talk* to somebody, *did you?!*

This will be followed by one or more offers to: a) pose as your fiancé; b) pose as your husband, or; c) act as your interpreter while you pose as a deaf mute. (Note: if you already have a fiancé, husband or interpreter, it's assumed that that person will be handling the transaction for you.)

The fact is, we owe a great deal to the automobile industry in Hawaii. Of the 48 dealerships in the state, 17 are listed among the top 250 corporations based on annual sales. More than 3,000 people are employed directly by the industry and many more work in related fields, which run the gamut from window tinting and rustproofing to the processing of car loans and auto insurance.

Last year more than 60,000 new cars were registered in Hawaii, with an estimated 30 to 35% of those being fleet registrations to car rental companies who service the visitor industry. In total, the automobile industry in Hawaii generates close to $1 billion annually.

The advertising industry in particular benefits greatly from the auto industry in Hawaii. Traditionally, the majority of their advertising dollars are spent in newspapers, but television and radio expenditures are on the increase. Direct mail also garners a fair share of ad budgets. According to the Hawaii Automobile Dealers Association, Hawaii dealers have increased their advertising expenditures by approximately 10% over the past year and spent an estimated $13 million on advertising in 1987.

Not to be overlooked is the contribution this industry — and the individuals involved — make to the community. Hawaii's car dealerships have participated in the Jerry Lewis Muscular Dystrophy Telethon, have worked with and supported Mothers Against Drunk Driving, are participants in the Hawaii Coalition for Safety Belt Use, and support Viet Nam Veterans.

Obviously, these are pretty nice guys. Guys who would want me to get a fair deal, right? Which is why I decided



to pose as myself last year when it came time to trade my car in for a new one.

Yes, I had a lot of those offers I mentioned earlier. But I refused to believe that in this day and age a professional woman with a college education could not purchase a car on her own, without a fiancé, husband or interpreter. After all, I purchased a house last year and didn't need a man for that. I can change the oil in my car, unstop the kitchen sink and empty a mouse trap. And we're not talking brain surgery here; I just want to buy a car. How difficult can it be?

Not difficult, it turns out, if you do a little research first. Which I didn't. One day after work I visited the dealership that sold me the car I was driving and indicated my desire to swap that one for a new model. The salesman I spoke with assured me that he understood my priorities (low monthly payments; a quick and painless business transaction). We would, he said, have a long and rewarding relationship.

I believed him. I pictured myself purchasing all my

*Cover photo: Turner & de Vries

future cars from this man and adding his name to my Christmas card list. Until, after conferring with some important looking men I never got to meet but could see in a glass-walled office at the front of the dealership, he came back with "the very best deal he could get me," one he "went to the mat" for. In order to drive a new model off the lot, I would have to give him my car, a substantial chunk of cash and the low, low amount of $649 every month until a year very far into the next decade.

Uneducated about car deals as I was at the time, I knew enough to turn around and walk out. I consider myself lucky that all this experience cost me was time.

I learn fast and I immediately started making phone calls. I found out the value of my car, what would be a reasonable price for the car I wanted to buy and what would be the best way to go about getting it. Within the week, I was driving the new car, had gotten enough for my old car to pay off the loan at the bank and put some down on the new car, and was making monthly payments much less than half the "low, low" first offer.

The moral of the story? Always prepare before you shop for a car. If you know all the facts about the car you're trying to buy, you'll be in a much better position to make the deal you want. The information you'll need is readily available.

An excellent reference book is *The Complete Car Cost Guide,* which is published each March ('89 models will be in the upcoming issue.) This publication lists over 500 models and gives comparative information on the costs of ownership (a car that is cheaper to *buy* may not be cheaper to *own.)* You can order the guide through IntelliChoice, Inc., 4771 La Cresta Way, San Jose, California 95129 or call 1-800-CAR-BOOK. Cost is $39; add $1.50 for shipping.

Another printed source is *Auto Age Magazine,* a monthly publication that specializes in the retail end of the automotive industry, with particular attention to dealer problems. Also featured are manufacturer problems, which would be particularly helpful to someone choosing a new model. Annual subscription rate is $30; the publication can be obtained by writing: P.O. Box 2006, Van Nuys, California, 91499-0401.

There are numerous other auto publications available on newsstands and in your local library. And don't discount the information you can get from local dealers. They are well informed and, with few exceptions, will be very honest when dispensing information about their cars. Talking with several dealers from different dealerships will give you valuable input and go a long way in helping you make the right choice.

If timing permits, an excellent source of information is the annual First Hawaiian Auto Show held on Oahu the last weekend in October. Shows are held on neighbor islands as well. In fact, Big Island residents may want to attend the First Hawaiian Hilo show on February 23-25 at the Edith Kanakaole Tennis Stadium, or the Kona Auto Show on March 9 - 11 at the Kona Surf Resort Exhibition Hall. The show is sponsored by First Hawaiian Bank, as a public service to the community, consumers, and dealers alike. The shows have become extremely popular, primarily because attendees can look at many different makes and models and not feel pressured to buy.

In this Show, the cars are the stars. Look as long as you like and ask questions about features and options. And there's always something extra. Last year's Show featured a computer system in the bank's exhibition area that helped potential car buyers determine monthly payments, and an auto safety room, sponsored by the City's Department of Transportation Services, in which over 5,000 people tested their driving skills.

Whatever the source, get as much information as possible before you go to buy. As one expert in consumer protection put it, "Those who buy before they have all the facts deserve what they get."

NEW CARS TO WATCH IN 1989

The Jaguar XJ-S Convertible. For over a half-century, open Jaguars have occupied a unique place in the annals of motoring history. Two-seater Jaguars have always represented the essence of speed, grace and sporting style. Today, this Jaguar tradition continues in the new XJ-S convertible.

The 1989 XJ-S convertible is powered by one of the most potent and thoroughly proven high-performance engines, a light-alloy, overhead cam, 262-horsepower V-12. Add to this sophisticated four-wheel independent suspension, and four-wheel power disc brakes, complemented by a new and advanced anti-lock system. And inside, the luxury of handcrafted wood and supple leather. Definitely a car to watch in 1989.

Infiniti. The Infiniti, a new luxury car line, will be introduced in the fall of 1989 by Nissan Motor Corporation. The Infiniti will initially be available in two models: the Q45, a four-door luxury sedan powered by the first Japanese V-8 engine, and the M30, a sport luxury coupe with a powerful V-6 racing engine.

"The introduction of the Infiniti brand marks the beginning of a new era in the luxury automotive category," says Dwane Brenneman, vice-president and general manager of Nissan Hawaii. "There is a tendency to describe new cars in terms of models currently on the road. In our case, that would be misleading. Infiniti automobiles are totally new. They challenge the traditional concept of luxury with their exceptional balance of performance, styling, and comfort."

The Toyota Cressida. Cressida, Toyota's luxury sedan, takes on a new look inside and out for 1989, while adding increased performance and comfort. The new Cressida boasts a heritage of recognized reliability — named the most trouble-free car in America for the past two years by J.D. Power & Associates.

Cressida's big news for '89 is under the hood where Toyota's 3.0-liter, six-cylinder twin-cam, 24-valve replaces last year's 2.8-liter, 12-valve twin-cam.

Derived from the Supra engine, the electronically fuel-injected power plant produces an impressive 190 horsepower at 5,600 rpm — a 22 percent increase over the previous model's 156 horses.

A newly designed suspension system featuring MacPherson struts in the front and double wishbones at the rear deliver a smoother and quieter ride.

Inside the cabin, new features include a tilt and telescopic steering wheel, upgraded automatic air conditioning, and a six-speaker audio system. Add to this a wider, lower, longer and more aerodynamic body style. A great car to examine in 1989.

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Harry Selker, M.D.
Boston, Massachusetts

AFTER SPENDING 12 YEARS IN THE EMERGENCY ROOM, HE'S GLAD HE DRIVES A VOLVO.

Harry Selker bought his first Volvo because it was a tough, durable, reliable car.

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But after 12 years of working in emergency rooms and hospitals, seeing the results of numerous automobile accidents, Dr. Selker has discovered another reason for driving a Volvo.

It seems like the only intelligent thing to do.

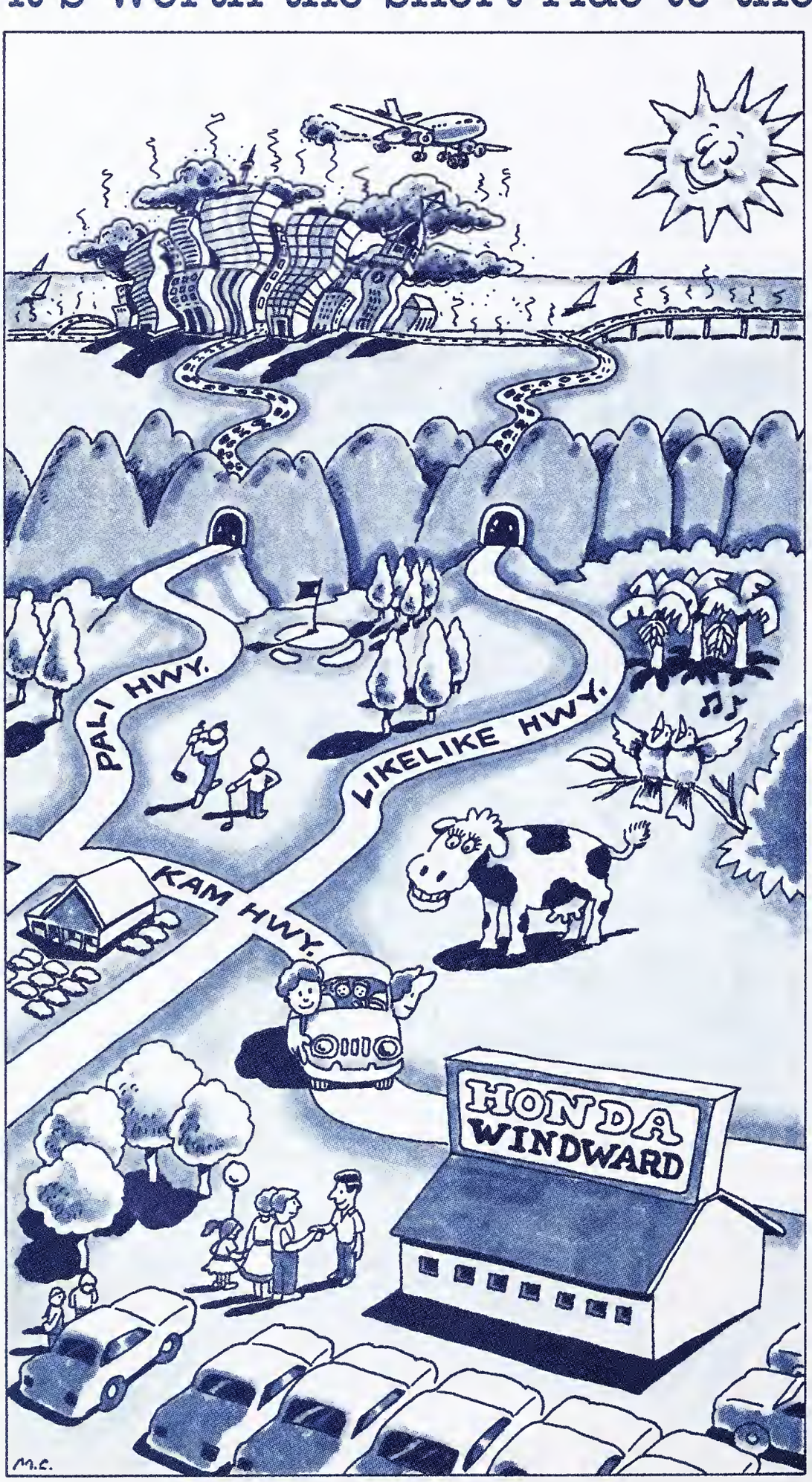
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MEGADEALERS: *The New Trend*

By Barbara Scott

Managing editor C.D. Bohon, of Auto Age Magazine, first coined the term "megadealer" in 1985 to describe the changing trend in automotive dealerships across the country. His 1985 case studies are still representative of the dealership changes that continue to send shock waves through the automotive world.

Probably the best one centered around the Hoffman Company of Hartford, Conn.

Israel Hoffman started an Oldsmobile dealership in 1919. All of his life he never operated more than one dealership at a time. "The philosophy was, there is only one line in the world, and you are more loyal to that than you are to your wife," says Todd Hoffman, Israel's grandson. When Hoffman's father, Burton, took over in 1956, he continued to carry only one car line until 1967, when he added a Ford store to complement his Oldsmobile line. As his sons, Jeffrey, Bradley, and Todd entered the business, they began branching out and adding new franchises.

Today, the Hoffman brothers have nine franchises in seven locations, and have established a holding company called Hoffman Enterprises to oversee and manage their assets.

The brothers sell something on the order of 9,000 new cars yearly and gross $125 million. They currently rank no. 59 on Auto Age's 100 Top Megadealers for 1988.

Changing Times

Changing economic conditions are forcing the expansion of product lines to protect against fickle buyers and high operating costs. Because the Hoffmans have so many different franchises, their link to any one manufacturer, while important, is not critical to the life of Hoffman Enterprises.

The Hoffmans have both a Toyota and Hyundai franchise. "We have Hyundai, so if they're not buying Toyotas and they are buying Hyundais . . . I'm covered," says Todd Hoffman. And if Hyundai is a bust, he can still sell Isuzu, or Honda, or Ford, or Plymouth or. . . .

This trend is far from unique.

In the Auto Age 100 Top Megadealers, there are eight in the U.S. who operate 20 or more franchises; 17 who operate 10 or more franchises; and 46 dealers who operate five to nine franchises.

Only one of the top megadealers bases its headquarters in Hawaii, the Cutter Management Company. The largest group of megadealers are located in California, with 17 megadealers controlling 133 dealerships.

The cost of starting an automotive dealership and running it efficiently is forcing this consolidation trend. To start a dealership requires a choice piece of property and building-$1 million plus. New car inventory would require $1.5 million, and adequate used car inventory should cost $400,000 to $500,000. Add to that a parts store, service department and body shop. Also, salaries for top management people, advertising expenses, and routine operating costs.

Dual franchises become a necessity for survival. By creating a holding company, the corporation can hire highly educated management teams, add a centralized accounting system with computers to link-up all the dealerships, and an in-house advertising department. With control centralized, management efficiency is improved and personnel costs reduced.

Benefits to Buyers

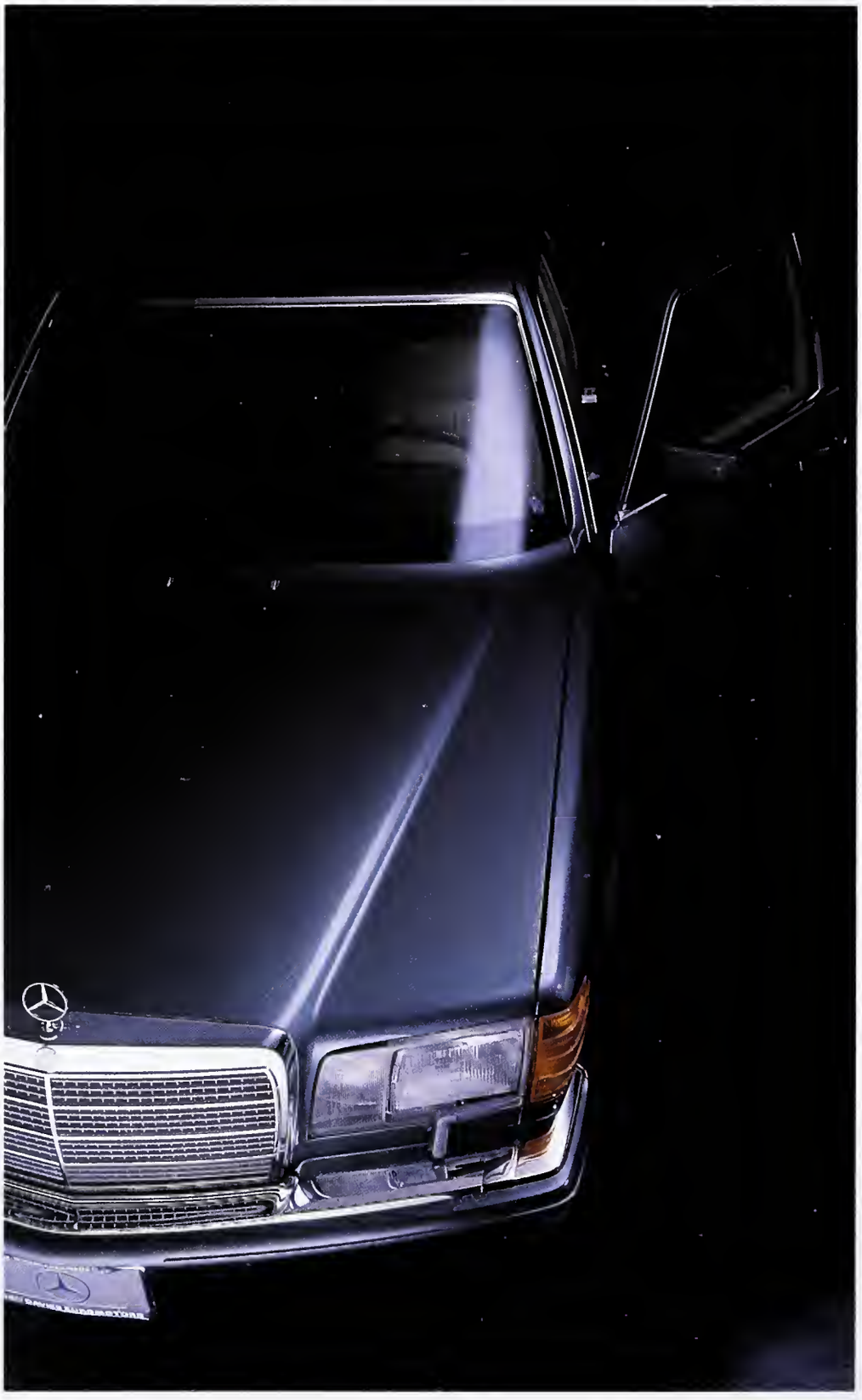
In theory, the megadealer idea is sound. As holding companies are formed to run these organizations more efficiently, the money saved can be passed on to the consumer; however, it is too early to tell if this is possible. Some analysts are concerned that many megadealers are expanding too quickly to stay solvent. The dealers that flounder may be purchased by other megadealers forming a new group called "mega-megadealers." If this happens, a monopoly situation may develop that hurts consumers.

Another major problem may involve the loss of dealer identity as they continue to grow larger. Most dealerships in Hawaii were started by entrepreneurs whose vision guided their operations. Executive decisions were made by the owner, not a management group. Can the dealerships, started by these entrepreneurs, continue to offer the same personalized service as they grow into empires? If not, dealer loyalty will be lost forever, and both the consumer and dealer could come out on the short end.

Only time will tell whether megadealers are good or bad for everyone.

OUR S-CLASS CARS COME WITH A HOT NEW OPTION:

EIGHT-YEAR FINANCING.



Try getting that feature on any other car. From any other dealer.

Of course, any new model you choose from Hawaii's only authorized Mercedes-Benz dealer automatically comes with all our attractive standard features. Like prompt, reliable service from factory-trained technicians. An extensive inventory of genuine Mercedes-Benz parts. Full factory warranty. And whether you buy or lease your car, you'll also get extremely competitive terms.

The world's finest automobile and up to eight years' financing.* We think that's an option you'll want to exercise right away.



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Kona • 74-5615E Luhia St. • 329-7616

*Eight-year financing is available on new S-Class and SL models only. Seven-year financing is available on all other new models.

Profiles: Six Hawaii Dealerships and the Leaders Behind Them



An early dealership circa 1920s.
—Photo Courtesy of Servco Pacific Inc.

No business is a success by accident, and that is particularly true in the automotive industry. To be successful requires sound management skills and the foresight to change with the times. Meet the leaders behind six Hawaii dealerships.



Peter Fukunaga

In 1919, Peter Fukunaga's first love with the automobile culminated in the takeover of a two-car repair garage in Haleiwa on the island of Oahu in Hawaii. It was perhaps a move that brought the first real competition in auto repair work to the outskirts of Honolulu proper.

Few service stations were available during this period, despite the fact that by 1916 annual passenger car sales in the United States had reached more than one and a half million.

Peter Fukunaga's keen awareness of the enormous impact that this new invention would eventually have on the Hawaii market prompted him to purchase the modest operation with little collateral except a $25 down payment and the sheer determination to succeed.

People who knew the founder said that he had mastered the intricacies of business — a personal commitment to hard work, dedicated employees, and an ability to satisfy customers. Working along side his employees, Peter Fukunaga established a reputation as a firm but fair employer. It was his steadfast belief that one should make the best products and services available to meet customer needs. Before long, the garage prospered and the operation expanded to six mechanics and a blacksmith.

Efforts to boost efficiency resulted in a merger with two neighboring garages and the corporation was named *The Waialua Garage Company*. Doubling as a sub-dealership to complement existing auto repair services, the Company redirected its growth in 1926 with the acquisition of a General Motors distributor franchise to sell Chevrolets.

Sales were brisk and ultimately the operation was strategically moved to Wahiawa in central Oahu to be near a flourishing town arising from a growing military resident population and the pineapple companies based in the area. With the change of emphasis into vehicle sales, a contest was held to give the expanded company a new name. The successful outcome — the adoption of *Service Motor Company*. For the winner, an Army Air Corps sergeant, suggested "service is the heart of the Company's policy."

As events pointed towards a possible depression, Peter Fukunaga recognized that the Company's dependence on automobile sales would not be enough. He sought to diversify the business and opened an appliance store in Honolulu. He obtained the distributorship for Easy Spin-Dry Washing Machines and later, began to distribute other home appliances and musical instruments. Interest in all the wares offered by his establishments was high, but times were hard and many potential customers didn't have the cash to afford purchases. Peter Fukunaga filled that void by starting Service Finance, Ltd. in 1931 as an adjunct operation. When the Depression ended, business on all fronts prospered.

During the early '50's, import cars captured a significant share of the compact car market. Not to be left out, the founder traveled first to Germany and then to Japan — utilizing his background as a mechanic to testdrive vehicles of the leading manufacturers. In 1958, two years before his death, Peter Fukunaga successfully negotiated for the exclusive Toyota vehicle import-distribution franchise for the State of Hawaii.

On its Fiftieth Anniversary in 1969, his sons George and Thomas Fukunaga changed the corporate name to Servco Pacific Inc. It was chosen to express a philosophy of service to a growing geographical area, embracing more and more of the wide Pacific Ocean. Peter Fukunaga would have been pleased.



Mike Keppel

The year is 1969 and you've just been approached by a Japanese firm that builds motorcycles and asked if you'd like to market a new car they've designed. Would you say, "yes?"

Hindsight being 20-20, we might all say "yes" today. But it took vision to make that decision twenty years ago. The Japanese firm was Honda, the car the NS 600, the first Honda automobile. And the man who said "yes" was Jimmy Pflueger, who was born and raised in Hawaii.

According to Mike Keppel, Director of Automotive

Operations at Pflueger, Inc., Pflueger was approached by Honda in early 1969. Having been denied permission to market the number of cars they wanted to build in their own country, the Japanese firm decided to try the United States, where their motorcycles had been a great success. Presented with the opportunity to become the first Honda dealer in America, Pflueger agreed to take a look at the new model and soon found himself with 100 new cars and three representatives from the company.

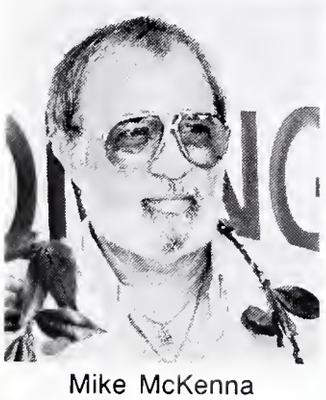
Pflueger insisted that all four of them take the new, little car for a test spin — up Tantalus. Half way up, at Pflueger's instruction, they stopped and restarted the car to test the clutch. It failed. And on the way back down, the brakes did about the same. Before the cars were sent back to Japan, Pflueger suggested improvements to the clutch, brakes, and a longer seat track, for taller drivers. He thought he'd seen the last of the Honda cars forever.

Not so. A short month later, 200 Hondas arrived in Honolulu. This time, all had been corrected to his specifications and Pflueger became the first Honda dealer in America. Today, Pflueger Honda is the fifth largest Honda dealership in the United States in retail sales.

Pflueger has influenced Hawaii's automotive industry in other ways, too. A racing enthusiast, Pflueger was concerned about drivers, especially young ones, who used city streets to drag race. In 1964, after his efforts to get the city to designate an area where drivers could race safely and legally proved futile, Pflueger built Hawaii Raceway Park located in what is now Campbell Industrial Park.

Plueger, Inc. continues to expand its automotive business today. Last year, a new 90,000-square-foot Honda complex was built on Ala Moana Boulevard. The Acura dealership, purchased in 1985, was moved from Aiea to the former Honda facility on Beretania. This year, the company has established a satellite store for Lincoln Mercury in Aiea (the original store remains on Nimitz Highway), and, in June, bought a Chrysler Plymouth dealership in Waipahu.

"For the automobile business as a whole, the future looks bright," says Keppel, "but, dealerships that continue to be successful are those that make customer satisfaction the top priority."



Mike McKenna

In this day of computers and mega-dealers, it's unusual to find businesses where the owner takes a personal interest in customer satisfaction. But that's exactly what you will find at Ala Moana Porsche Audi VW.

"If a customer is unhappy, "says owner Mike McKenna, 'either with the product or the service, I want them to see me."

Sound like a line? It might if you didn't know the man who said it. McKenna, who started in the dealership business selling Datsuns in southern California, has become what some are referring to as a "mega-dealer." Sons Danny and Patrick manage five dealerships on the Mainland, including one in Huntington Beach and four in Norwalk, California. The store in Huntington Beach is the number one Volkswagen dealership in the nation; the Norwalk operation, on six acres, carries Volkswagen, Porsche, Audi and BMW. But "mega-dealer" is not how McKenna thinks of himself.

"Really, we're just a family operation, he explains.

A local boy at heart, McKenna was raised on Maui, attending school on the Mainland, but returning home each summer. He attended the University of Rhode Island, but quit to join the Marine Corps in 1950 at the start of the Korean War.

McKenna returned to Maui five years later only to find a shortage of jobs. After taking a year off and hanging out at the beach, he moved to southern California where the weather was similar but job opportunities were better.

Indulging his passion for cars, McKenna began building racing engines and race cars. He then started racing on the southern California circuit. This led to an invitation from Yukata Katayama, then president of Datsun, to race for them and, a year later in 1965, McKenna became the first exclusive Datsun dealer in Whitier, California. "I was hooked on car dealerships from then on," says McKenna.

Having volunteered to move back to Hawaii while his sons run the California dealerships, McKenna operates the Ala Moana store as well as a leasing company in Hawaii Kai. He says the diversification of product lines has been necessary to maintain profitability through rough times.

There are differences in the Hawaii and California markets, says McKenna. In California, McKenna's dealerships sell about 300 used cars each month compared to 60 in Hawaii. And leasing comprises 75% of his California business while only 30% of his Hawaii business is leasing. McKenna expects the leasing business in Hawaii to increase, however, and has developed the Hawaii Kai property to meet that need.

An avid supporter of polo in the Islands, McKenna can usually be found at the Mokuleia polo field when he isn't at one of his stores. Mega-dealer? Maybe in numbers, but not at heart. McKenna considers his dealerships to be family-owned operations where the customer always comes first.



Don Lucas

Don Lucas, owner of Honda Windward, built his dream on step at a time. Today, the Lucas Dealership Group has eight automotive franchises in the San Francisco and San Jose California markets plus Honda Windward in Kanoehe. The Lucas Dealership Group's sales exceed $200 million annually and is ranked as one of the top 50 megadealers in the entire country. In fact, Lucas was one of the first dealers to understand the megadealer concept back in 1974.

Don Lucas developed an interest in cars while a student at San Jose State University back in 1954. He dealt in cars, customizing his own Ford coupes and Chevy convertibles and also selling cars at a used-car lot near the campus. By 1957, he had a dealer's license, first selling from his apartment, then off his own car lots.

Four years and three used car lots after graduation, Lucas opened his first new car dealership, a British Motors franchise in Sunnyvale, California. He then opened a second British Motors franchise in San Jose.

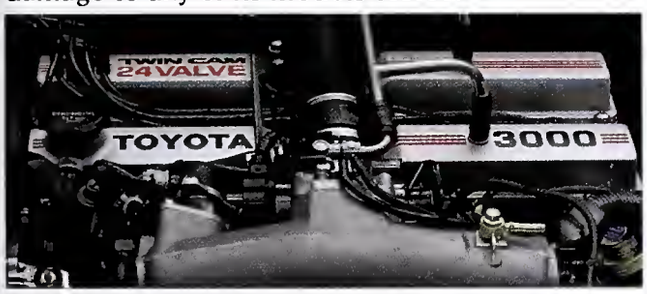
Toyota means Quality.

Quality Craftsmanship

Over the years, people have grown to expect quality-built automobiles and trucks from Toyota. After all, Toyota set the standard for reliability.

Toyota offers automobile technology at its most advanced. Engines built to perform. Automobiles and trucks designed to be both aesthetically pleasing and aerodynamic. Craftsmanship with an attention to detail that is unsurpassed.

Toyota outperformed all other imports in low speed crash tests conducted by the **Insurance Institute for Highway Safety** by sustaining the least amount of damage in four different tests. In the front-into-barrier and rear-into-barrier crash tests at 5 mph, Toyota was the only import automaker with no damage to any of its models tested.



Cressida's new 3.0-liter 6-cylinder twin cam 24-valve engine.

Low Maintenance

The quality craftsmanship that goes into each and every Toyota means low maintenance for you. Ask any Toyota owner.

According to an 1988 independent survey of over 30,000 owners of 139 different models of import and domestic cars, the Toyota Cressida was the most trouble-free car sold in America. It was also selected as the most trouble-free in 1987. And in 1985, it was the Toyota Camry.†

And, you'll find no warranty better than Toyota's 36-month/36,000 mile warranty with no deductible and no transfer fee.

Popular Mechanics praised Toyota:

" . . . in terms of fit, finish and overall finesse, Toyotas pretty much rule the road. They come out on top every time we do a comparative Owners Report roundup. Nobody - not even the Germans - produces cars that are more troublefree and reliable than Toyotas. And we're talking now about all Toyotas, regardless of price or model."

† J.D. Power & Associates New Car Initial Quality Survey. Based on problems encountered in first 90 days of ownership

Excellent Resale Value

The true measure of quality in a car is how well it holds its value over time. Here again, Toyota comes through for you.

The Toyota Tercel was found to be worth **more** than its original price after one year of use! 105% of its purchase price!* The Toyota Camry was worth 100% of its original price after one year of use. Toyota Corolla - 99.4%, Toyota 4Runner - 97.9%, Toyota Van - 96.5%, Toyota Celica - 92.6%.**

* Kelley Blue Book - Western Edition, Sep-Oct '88
** Kelley Blue Book - Western Edition, Nov-Dec '87
Actual resale value may vary depending on optional equipment, geographic location, condition of vehicle and mileage.



A leather interior is optional with the Camry LE Sedan.

30 Years of Quality Service

Toyota Hawaii is proud to have served the people of Hawaii for 30 years. With salespeople that care. Service departments with skilled technicians and state-of-the-art equipment. And, parts departments that are well-stocked and staffed with knowledgeable employees.

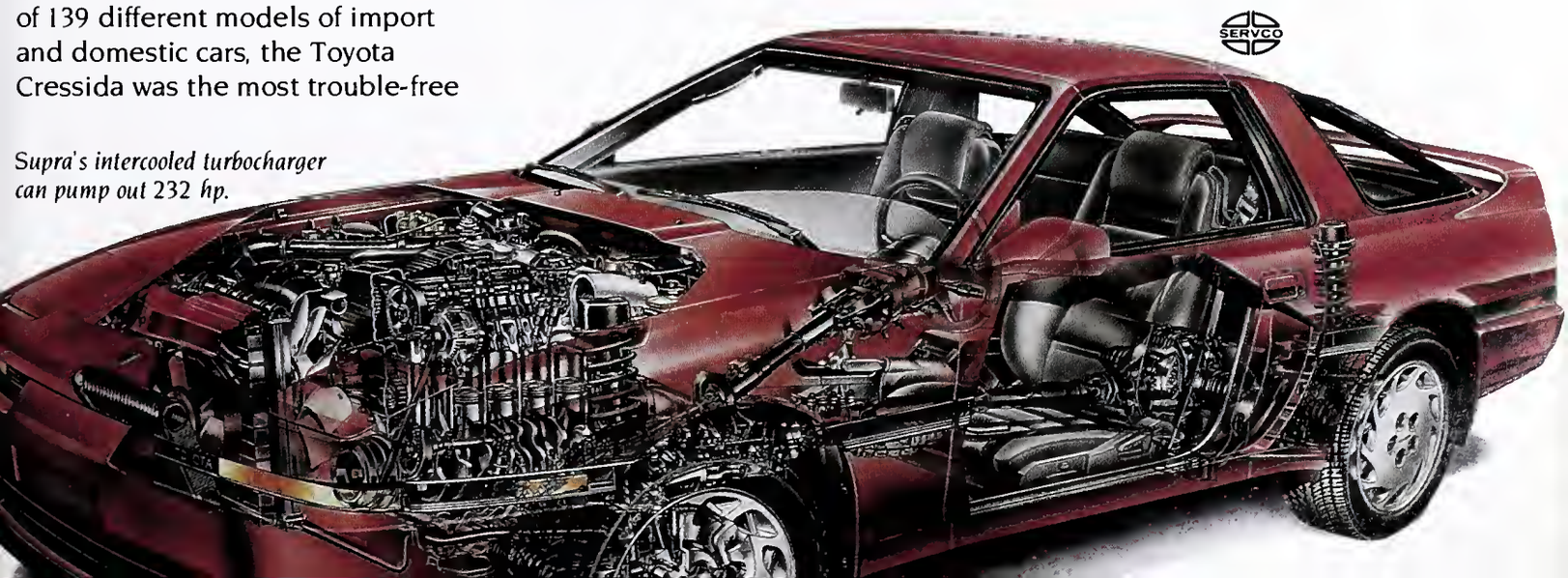
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TOYOTA QUALITY. See for yourself today!

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TOYOTA CITY, Moanalua	Ph. 834-1402
WAIPAHU TOYOTA, Waipahu	Ph. 677-3161
WAHIAWA TOYOTA, Wahiawa	Ph. 622-4195
WINDWARD TOYOTA, Kaneohe	Ph. 235-0068
KAILUA TOYOTA, Kailua	Ph. 261-3321
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DIVISIONS OF SERVCO PACIFIC INC.

SERVCO



Supra's intercooled turbocharger can pump out 232 hp.

In 1967, Lucas sold his two dealerships to their respective managers so he could open a General Motors franchise, All American Pontiac in San Jose. From 1970 to 1985, Lucas owned and operated 20 different automobile franchises representing just about every major domestic and important automobile line available.

"I really wanted to represent only the best products. There was no reason to stay with a manufacturer who didn't produce the highest-quality product, so we moved within the market by changing franchises," he says.

By 1974, Lucas recognized the need for a management umbrella to run his dealerships more efficiently. Currently, the Lucas Dealership Group operates dealerships for Honda (2), Cadillac (2), Oldsmobile, Sterling, Acura and BMW. All the dealerships are within a hour drive of San Jose with the exception of Honda Windward in Kaneohe.

Lucas is currently talking with General Motors to represent their new Saturn franchise in both Hawaii and the San Francisco bay area. Saturn is a new division of GM and will be introduced in the fall of 1990.



Jim Slemons

As one of Orange County's most successful businessmen, Jim Slemons stands as a living testimony to the spirit of American ingenuity and professional leadership. His business accomplishments in a variety of transportation-related industries are matched only by a lifelong commitment to supporting an equally diverse list of important causes.

For the past 27 years, Slemons has owned and operated a Newport Beach-based corporation controlling five automobile dealerships in California and Hawaii, including Jim Slemons Imports, a Newport Beach Mercedes-Benz dealership that continually ranks as the top Mercedes-Benz dealership in the United States, and among the top 25 dealerships of the more than 22,000 in the country. Under Slemons' direction, the corporation has matured into one of the country's leading automotive retailers, with a staff of more than 400.

In commemoration of Slemons' far-reaching business acumen, the Orange County Board of Supervisors proclaimed him "The Outstanding Businessman in Orange County" in 1986. He also has been admitted into *Sports Illustrated's* prestigious Hall of Fame for Outstanding Dealer Accomplishments.

A native Southern Californian, Slemons is strongly committed to serving the local community, and he remains active in Rotary International, the 552 Club of Hoag Hospital, the Newport Chamber of Commerce, the Cystic Fibrosis Foundation, and much more.

Locally, Slemons provided wrestling uniforms for the Hawaii Police Department to participate in the National Policeman Olympics. He also sponsored a charity volleyball tournament to support a local athlete in his air rifle/target shooting pursuit in the Seoul Special Olympics.

Slemons credits much of his business and philanthrophy success to 14 years of duty with the Eleventh District of the United States Coast Guard Reserve (USCGR). In this capacity, he served as an aide to Rear Admiral Jones for more than four years.

Slemons' many military accomplishments include serving as public affairs officer in charge of introducing the USCG to the motion picture and television industry, completing detailed feasibility studies on mobilization in Guam and Hawaii, and assisting on three tours with the USCGR Cutter Glacier.

A graduate of the University of California at Davis, Slemons lives with his wife, Diane, in Newport Beach. They also have a home here in Hawaii.



Bill Shafer

If you have the wherewithal and inclination to invest $33,000 or more for an automobile, you also have certain expectations. Pleasantly exceeding those expectations is what has made TheoDavies Euromotors one of Hawaii's most successful automotive dealers, according to Bill Shafer, the company's president. But getting to the top took time and money.

When Theo H. Davies & Co., Ltd. acquired it in 1979, the dealership, formerly Eurocars of Hawaii, sold both Mercedes-Benz and BMW automobiles. One of Shafer's first acts as president of the new TheoDavies Euromotors was to survey the dealership's customers.

The firm's reputation in the area of service had room for improvement.

Shafer and his management staff immediately set about to turn the situation around, spending more than $1 million to upgrade the showroom and the service facilities, including the doubling of service capacity with the addition of twelve new service bays. They deal exclusively with Mercedes-Benz on Oahu. The Hilo and Kona branches have exclusive representation for Honda automobiles on the Big Island, in addition to Mercedes-Benz. "Our service technicians are all factory-trained and attend annual factory refresher courses on Honda and Mercedes", Shafer said.

Because service after the sale is so vital to building customer loyalty and repeat business, Shafer and his staff offer their clientele a number of attractive perks. These include extended service hours on Oahu from 7 a.m. to 6 p.m., Saturday service, a Roadside Assistance Program that puts stranded motorists in touch (via cellular phone) with a technician after normal service hours and on holidays, and a car wash after servicing.

In addition to the high quality of service, Shafer attributes an innovative joint-sales promotion with Bank of Honolulu for building Mercedes sales to record levels. "We were among the first dealerships in the country, and the very first in Hawaii, to offer seven-year financing and seven-year leasing. The program has really helped put these superior automobiles within reach of more people." Shafer added that the program was possible because Mercedes-Benz automobiles hold their value better than other luxury cars, so the bank felt confident about extending such long-term financing.

But what about customer loyalty? If George Winters and his wife, Madeline, are any indication, Shafer's emphasis on service has scored a knock-out. Through the dealership's European Delivery Program, Winters has bought 14 new Mercedes-Benz cars from TheoDavies. "They're the best," said Winters.

PFLUEGER AUTOMOBILES

PFLUEGER
ACURA

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PH 942-4555



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HONDA

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HONOLULU, HI

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PFLUEGER
LINCOLN-MERCURY



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AIEA 98-055 KAM HWY. • PH. 487-7228

PFLUEGER
CHRYSLER-PLYMOUTH

94-047 FARRINGTON HWY
WAIPAHU, HI

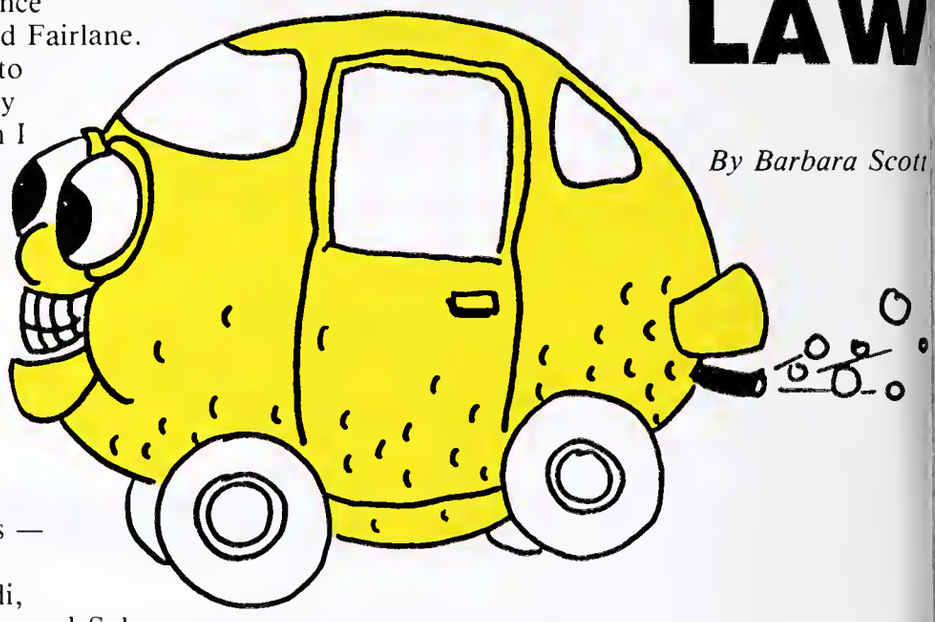
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SERVING HAWAII FOR OVER 25 YEARS WITH QUALITY AUTOMOBILES AND SERVICE!

THE LEMON LAW

By Barbara Scott



A new car "lemon" is very rare, fewer than one in 5,000. For those who've had a lemon during their lifetime, the fear never fades. My lemon experience occurred in 1958 when my parents bought a Ford Fairlane. It was a beautiful car, but nothing ever seemed to work correctly. I vividly remember the names my father called that car and the anxiety I felt when I learned to drive it years later. I never worried "if" it would leave me stranded, but "when" and "where."

Back then, there were no laws protecting the consumer. Today, several options are available to every new-car buyer.

One such option is the Autoline Program administered by Better Business Bureaus across the country. Certain manufacturers have designated the Autoline Program as their representative for problem new cars. Current participating manufacturers are: General Motors — seven car and truck lines, AMC-Jeep/Renault through the 1987 model year, Volkswagen/Audi, Honda/Acura, and Saab, and in Hawaii, Nissan and Subaru. This program is open to personal-use vehicles only. Business or lease cars are excluded.

This is how the program works: The Better Business Bureau (BBB) receives a phone call from a disgruntled new-car buyer who wants to file a complaint about a defective new car. The call is directed to the Autoline specialist at the BBB. In Hawaii, this specialist is Herbert Kondo, BBB vice president.

Kondo talks in detail with the complaining consumer to determine what steps have already been taken to solve the problem: Did the consumer try to have the problem corrected by the dealer? How many times? Did they keep adequate records? Did the consumer notify the manufacturer in writing about the recurring problem as outlined in the warranty manual? These questions are asked to reinforce the importance of a written chronology to support the consumer's case in an arbitration proceeding.

After these questions are discussed, Kondo mails a Customer Claim form and information about the Autoline Program. When the completed complaint form is returned to Kondo, he sends it to the appropriate zone representative. The manufacturer then processes the claim and outlines its plan for correcting the problem.

If the consumer is not happy with the manufacturer's response, then arbitration is scheduled, unless the consumer decides to drop the case. Once the arbitration decision is rendered, only the consumer has the option to accept or reject the arbitrator's decision. The manufacturer does not have this option.

According to Kondo, about 30 new-car complaints are filed monthly. Less than 30 percent go to arbitration.

The normal recourse is a buyback of a car, less depreciation for the months used, or extensive repair at no cost to the consumer plus reimbursement of certain incidental expenses.

If you are having problems with a new car, call Herbert Kondo at 942-2355. This program is free to the consumer.

If your manufacturer does not participate in the Autoline Program, or if you prefer to use another program, you have recourse under the State of Hawaii New Car Warranty Law, popularly called the Lemon Law.

Under the Hawaii Lemon Law, you have certain rights and options if your new vehicle has an unrepairable defect during the warranty period. Like the Autoline Program, it is the consumer's responsibility to notify the manufacturer of the problem and to keep adequate records to subtantiate the claim.

Under the Lemon Law, every new-car dealer must furnish the car buyer with an outline of the New Car Warranty Law. This outline lists the basic steps that must be followed before arbitration is possible under the State Certified Arbitration Program (SCAP).

If you decide to arbitrate under the SCAP Program, a $50 filing fee is necessary to initiate the proceedings. The filing fee will be returned if you win the arbitration.

If you have questions about a particular problem and want advice, contact the American Arbitration Association at 531-0541.

The Hawaii Automobile Dealers Association (HADA) also offers a national consumer complaint program called AUTOCAP.

During 1988, the Hawaii AUTOCAP program, in its sixth year, handled approximately 340 consumer complaints against dealers/manufacturers.

About 80 percent of these calls can be directly attributed to the state's Warranty or Lemon Law.

AUTOCAP, while equipped to handle Lemon Law arbitration cases, has shied away from them, unless specifically requested by the manufacturer. That's because most domestic and import manufacturers have contracted Better Business Bureaus to handle such cases.

The Hawaii AUTOCAP program primarily assists callers with dealer related problems. Hardy Hutchinson, manager of HADA, listens to the complaint and advises the caller who to contact in the dealership, usually either the owner or general manager. Few of these problems ever require a second call. There is no charge for AUTOCAP services.

No figures are in yet for 1988, but a survey of dealers conducted in 1987 by the association on the Lemon Law revealed the following statistics: 28 dealers reported 11 buybacks of vehicles and eight cash settlements out of 60,000 new cars sold. Not a bad average. For more information on the AUTOCAP Program, contact Hardy Hutchinson at 526-0159.

THIS IS THE ONE YOU'VE BEEN WAITING FOR.



THE 1989 NISSAN MAXIMA

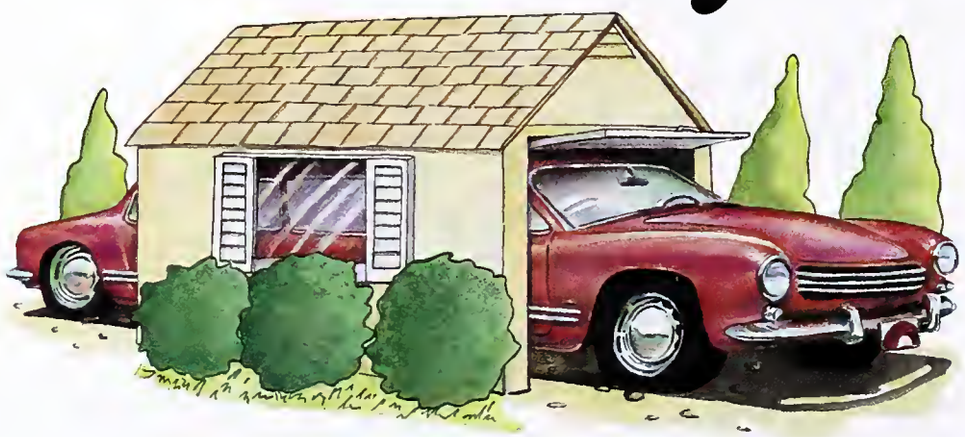
It's here. Completely new. Completely re-designed. The maximum luxury sedan.
With tight European suspension, quality Japanese craftsmanship,
American amenities and American size.
The 1989 Maxima. The sleek four-door sports/touring sedan from Nissan. More power.
More room. More luxury. This is the one you've been waiting for.

NISSAN

Built for the Human Race.

Pacific Nissan • Nissan Waipahu • Windward Nissan • Nissan Pearl City • Nissan Wahiawa • Cutter Nissan
Kauai Nissan • Big Island Nissan

The one auto loan that gets you more car for the money.



Having a loan with lower than usual monthly payments means you can consider a better than usual car.

That's what our Limited Edition Auto Loan is all about. Since monthly payments are up to 18% lower than conventional loans, you're able to look at cars you may have thought were out of your price range. In effect, the loan gets you more car for your money.

Low monthly payments are possible because the Limited Edition Auto Loan is structured like many home mortgage loans—your payments retire part of the loan. When the loan term ends, you have a choice: pay off the rest with a single final installment ("balloon") payment...or just refinance the balance.

And no other loan offers such an array of standard features: down payment as low as 15%, your choice of terms up to 5 years, PayAnyDay® of the month, and no prepayment penalty.

So if you can't handle large monthly payments, or if you want to get more car for your money, ask your dealer if you can qualify for the loan that's as innovative as this year's model. First Hawaiian's Limited Edition Auto Loan.

Here are two examples of how much more you can borrow with a Limited Edition Auto Loan:

Type of Loan	*Amount Financed*	*Payment**
Conventional 4 year	$10,000	$271 (48 monthly payments)
Limited Edition 4 year	$12,534	$271 (47 monthly payments, plus one final installment of $4,592)
Conventional 5 year	$10,000	$231 (60 monthly payments)
Limited Edition 5 year	$11,800	$231 (59 monthly payments, plus one final installment of $3,677)

*Based on 13.50% APR. Rate effective 12/20/88 and subject to change

Ask your dealer about First Hawaiian's Limited Edition Auto Loan.

FIRST HAWAIIAN BANK®

We say yes to you.

Member FDIC

PROFESSIONAL LIABILITY *(Continued from page 16)*

In the pre-hearing stage, all claims would be reviewed in an expedient manner by both a claims manager and by physician peer reviewers. If two independent expert reviewers find the claim has no merit, it would be dismissed. The claims manager would see that patients with meritorious claims were represented by counsel — agency lawyers provided at no charge, if the patient wished. All parties would be encouraged to settle *meritorious* claims at this stage, if possible. The standard of care would be changed to focus on whether the challenged actions fall within a range of reasonableness, to be determined by reference to the standards of a prudent and competent practitioner under the same or similar circumstances. If the claim is *not* settled, it would be assigned to a hearing examiner, who would oversee depositions, conduct a formal hearing and issue a written decision within 90 days.

Full appellate review of this decision, if called for, would be available before a three-person panel of the agency's state-chartered board, appointed from a cross-section of interested groups.

Throughout this process, patients would have the choice of using their own attorney or having an attorney assigned — at no charge — to help them review the claim and evaluate settlement offers.

What are the financial advantages of such a system?

It would pay full and fair compensation for *all* out-of-pocket injuries caused by medical malpractice. There would be no limit on recovery of medical expenses, lost income, or other economic losses. Unlike the current system, however, punitive and non-economic damages *would* be subject to guidelines; but even here, the ceilings would be generous — up to $700,000 — depending upon the claimant's age and the extent of injury.

The trial lawyers have warned that there is no precedent for removing medical claims from the courts; and that our proposal might be unconstitutional. However, administrative alternatives are nothing new. While all 50 states require the availability of a jury trial for civil suits at common law, certain variations have been accepted as constitutional scrutiny in every state. Under Workers' Compensation, claimants *lose their right* to a jury solution in exhange for a prompt, no-fault, administrative remedy.

This same *quid pro quo* applies to our proposal, ensuring its fairness. In both instances, patients *receive* an important benefit under the common law in exchange for *giving up* something else.

The plan requires significant legislative changes. It appears to be feasible and constitutional to enact a law setting up an administrative board to settle malpractice disputes, and make it unlawful to bring suit for malpractice directly to the courts.

Not only would this proposal be less costly and more predictable than the present tort system, but more of the money currently being spent on resolving malpractice claims would go to *patients* — not into court costs and legal fees.

Remember, no other country uses juries to resolve medical claims. They apparently recognize that juries do not serve patients well due to the complexity and high

(Continued on page 34)



Most patients need only one.

K-DUR™ 20 Microburst Release System™
(potassium chloride) 20mEq Sustained Release Tablets

A daily prophylactic dose in a single tablet.

Please see next page for brief summary of prescribing information.

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K-DUR™ | Microburst Release System™
(potassium chloride) Sustained Release Tablets

INDICATIONS AND USAGE: BECAUSE OF REPORTS OF INTESTINAL AND GASTRIC ULCERATION AND BLEEDING WITH SLOW-RELEASE POTASSIUM CHLORIDE PREPARATIONS, THESE DRUGS SHOULD BE RESERVED FOR THOSE PATIENTS WHO CANNOT TOLERATE OR REFUSE TO TAKE LIQUID OR EFFERVESCENT POTASSIUM PREPARATIONS OR FOR PATIENTS IN WHOM THERE IS A PROBLEM OF COMPLIANCE WITH THESE PREPARATIONS.

1. For therapeutic use in patients with hypokalemia with or without metabolic alkalosis, in digitalis intoxication and in patients with hypokalemic familial periodic paralysis.

2. For the prevention of potassium depletion when the dietary intake is inadequate in the following conditions: Patients receiving digitalis and diuretics for congestive heart failure, hepatic cirrhosis with ascites, states of aldosterone excess with normal renal function, potassium-losing nephropathy, and with certain diarrheal states.

3. The use of potassium salts in patients receiving diuretics for uncomplicated essential hypertension is often unnecessary when such patients have a normal dietary pattern. Serum potassium should be checked periodically, however, and if hypokalemia occurs, dietary supplementation with potassium-containing foods may be adequate to control milder cases. In more severe cases supplementation with potassium salts may be indicated.

CONTRAINDICATIONS: Potassium supplements are contraindicated in patients with hyperkalemia since a further increase in serum potassium concentration in such patients can produce cardiac arrest. Hyperkalemia may complicate any of the following conditions: Chronic renal failure, systemic acidosis such as diabetic acidosis, acute dehydration, extensive tissue breakdown as in severe burns, adrenal insufficiency, or the administration of a potassium-sparing diuretic (e.g., spironolactone, triamterene).

Wax-matrix potassium chloride preparations have produced esophageal ulceration in certain cardiac patients with esophageal compression due to enlarged left atrium.

All solid dosage forms of potassium chloride supplements are contraindicated in any patient in whom there is cause for arrest or delay in tablet passage through the gastrointestinal tract. In these instances, potassium supplementation should be with a liquid preparation.

WARNINGS: Hyperkalemia—In patients with impaired mechanisms for excreting potassium, the administration of potassium salts can produce hyperkalemia and cardiac arrest. This occurs most commonly in patients given potassium by the intravenous route but may also occur in patients given potassium orally. Potentially fatal hyperkalemia can develop rapidly and be asymptomatic. The use of potassium salts in patients with chronic renal disease, or any other condition which impairs potassium excretion, requires particularly careful monitoring of the serum potassium concentration and appropriate dosage adjustment.

Interaction with Potassium Sparing Diuretics—Hypokalemia should not be treated by the concomitant administration of potassium salts and a potassium-sparing diuretic (e.g., spironolactone or triamterene) since the simultaneous administration of these agents can produce severe hyperkalemia.

Gastrointestinal Lesions—Potassium chloride tablets have produced stenotic and/or ulcerative lesions of the small bowel and deaths. These lesions are caused by a high localized concentration of potassium ion in the region of a rapidly dissolving tablet, which injures the bowel wall and thereby produces obstruction, hemorrhage or perforation.

K-DUR tablets contain micro-crystalloids which disperse upon disintegration of the tablet. These micro-crystalloids are formulated to provide a controlled release of potassium chloride. The dispersibility of the micro-crystalloids and the controlled release of ions from them are intended to minimize the possibility of a high local concentration near the gastrointestinal mucosa and the ability of the KCl to cause stenosis or ulceration. Other means of accomplishing this (e.g., incorporation of potassium chloride into a wax matrix) have reduced the frequency of such lesions to less than one per 100,000 patient years (compared to 40–50 per 100,000 patient years with enteric-coated potassium chloride) but have not eliminated them. The frequency of GI lesions with K-DUR tablets is, at present, unknown. K-DUR tablets should be discontinued immediately and the possibility of bowel obstruction or perforation considered if severe vomiting, abdominal pain, distention, or gastrointestinal bleeding occurs.

Metabolic Acidosis—Hypokalemia in patients with metabolic acidosis should be treated with an alkalinizing potassium salt such as potassium bicarbonate, potassium citrate, potassium acetate, or potassium gluconate.

PRECAUTIONS: The diagnosis of potassium depletion is ordinarily made by demonstrating hypokalemia in a patient with a clinical history suggesting some cause for potassium depletion. In interpreting the serum potassium level, the physician should bear in mind that acute alkalosis per se can produce hypokalemia in the absence of a deficit in total body potassium while acute acidosis per se can increase the serum potassium concentration into the normal range even in the presence of a reduced total body potassium. The treatment of potassium depletion, particularly in the presence of cardiac disease, renal disease, or acidosis requires careful attention to acid-base balance and appropriate monitoring of serum electrolytes, the electrocardiogram, and the clinical status of the patient.

Laboratory Tests: Regular serum potassium determinations are recommended. In addition, during the treatment of potassium depletion, careful attention should be paid to acid-base balance, other serum electrolyte levels, the electrocardiogram, and the clinical status of the patient, particularly in the presence of cardiac disease, renal disease, or acidosis.

Drug Interactions: Potassium-sparing diuretics; see **WARNINGS**.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Long-term carcinogenicity studies in animals have not been performed.

Pregnancy Category C: Animal reproduction studies have not been conducted with K-DUR. It is also not known whether K-DUR can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. K-DUR should be given to a pregnant woman only if clearly needed.

Nursing Mothers: The normal potassium ion content of human milk is about 13 mEq per liter. Since oral potassium becomes part of the body potassium pool, so long as body potassium is not excessive, the contribution of potassium chloride supplementation should have little or no effect on the level in human milk.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS: One of the most severe adverse effects is hyperkalemia (see **CONTRAINDICATIONS, WARNINGS,** and **OVERDOSAGE).** There have also been reports of upper and lower gastrointestinal conditions including obstruction, bleeding, ulceration, and perforation (see **CONTRAINDICATIONS** and **WARNINGS);** other factors known to be associated with such conditions were present in many of these patients.

The most common adverse reactions to oral potassium salts are nausea, vomiting, abdominal discomfort, and diarrhea. These symptoms are due to irritation of the gastrointestinal tract and are best managed by taking the dose with meals or reducing the dose.

Skin rash has been reported rarely.

OVERDOSAGE: The administration of oral potassium salts to persons with normal excretory mechanisms for potassium rarely causes serious hyperkalemia. However, if excretory mechanisms are impaired or if potassium is administered too rapidly intravenously, potentially fatal hyperkalemia can result (see **CONTRAINDICATIONS** and **WARNINGS**). It is important to recognize that hyperkalemia is usually asymptomatic and may be manifested only by an increased serum potassium concentration and characteristic electrocardiographic changes (peaking of T-waves, loss of P-waves, depression of S-T segment, and prolongation of the QT-interval). Late manifestations include muscle-paralysis and cardiovascular collapse from cardiac arrest.

Treatment measures for hyperkalemia include the following:

1. Elimination of foods and medications containing potassium and of potassium-sparing diuretics.
2. Intravenous administration of 300 to 500 ml/hr of 10% dextrose solution containing 10–20 units of insulin per 1,000 ml.
3. Correction of acidosis, if present, with intravenous sodium bicarbonate.
4. Use of exchange resins, hemodialysis, or peritoneal dialysis.

In treating hyperkalemia, it should be recalled that in patients who have been stabilized on digitalis, too rapid a lowering of the serum potassium concentration can produce digitalis toxicity.

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PROFESSIONAL LIABILITY *(Continued from page 33)*

technology involved in evaluating these disputes. While a few of those who currently sue may win huge awards, many do not even recover their out-of-pocket expenses — after lawyer fees are deducted. Others with small claims receive no justice at all because they don't get their day in court. They simply have no access to the legal system. The proposed alternative plan could work better for both physicians . . . and patients. And, over time, it would cost less. It should also be politically feasible because it's balanced and fair. Patients would receive direct benefits under this system that they do not now receive. It will be easier for patients to file a claim, and to prove their case. Every claim would be reviewed, even the smaller ones that most lawyers reject today.

It is *not* our intent to cut attorneys out of the process. We are simply trying to reduce the high cost of the current system by quickly weeding out meritless cases, by promptly settling those with merit and by creating a more streamlined and predictable process.

A state could organize in one of two ways to administer this system. It could restructure the existing state medical board, or it could create a separate new agency to process the claims. In either case, as part of the balance offered to patients, we are proposing a comprehensive performance-monitoring system — to strengthen the state's hand in dealing with doctors who are unethical, impaired, or incompetent. Such physicians would be rehabilitated where possible; they also would be disciplined if they pose a threat to patient safety.

Obviously, not every adverse liability determination would give rise to disciplinary action, but repeat offenders could not escape notice under this system as they occasionally do now.

This aspect of the program would further enhance the important roles of the AMA Physician Masterfile and the state medical board. The Physician Profile produced by the Masterfile and the Federation of State Medical Board's data base would continue to be critical to the credentials checking process.

To bring fairness, not only to the disciplinary procedures but also to the claims process, the principal decision makers would be full-time claims reviewers and hearing examiners, neither of whom are likely to be health-care providers. Physicians would be used as expert peer-review consultants to the hearing examiners in much the same way as they now serve as expert witnesses to the courts. But, there would be stricter guidelines as to who could serve as an expert witness in a given case. These hired fast guns that ride circuit for plaintiffs' attorneys, medical experts wishing to get rich, would be out of business. Only the board of directors of the new or restructured medical boards, would have physician representatives; and these would be in the minority.

The plan recommends a board staffed by seven full-time members, appointed by the governor, that would include no more than three physician representatives. Because of the added responsibility for monitoring physician performance, these boards would require a higher level of funding. At a minimum, we would recommend that licensing fees collected by the state should be

(Continued on page 37)

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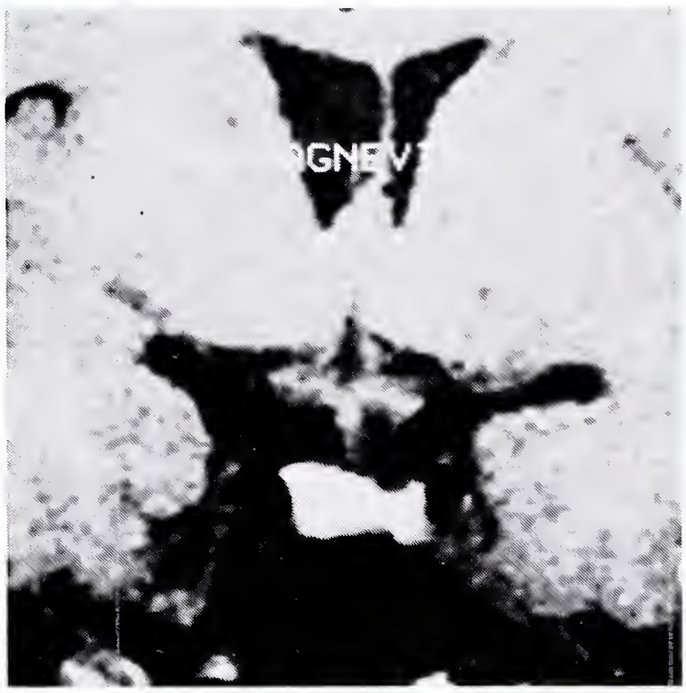
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MRI CASE OF THE MONTH

PITUITARY MICRO ADENOMA

Clinical History: 28 year old female with Amenorrhea

1



2



These images were produced by MRI Center of the Pacific using their 1.5 Tesla GE Scanner.

Radiologic Diagnosis: These are thin section coronal images of the Pituitary Gland both before (#1) and after (#2) the administration of gadopentetate dimeglumine. The presence of this 7 mm adenoma (arrow) is easily confirmed after the use of this newly available MRI contrast agent.

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earmarked or "dedicated" for the medical board's budget. Preliminary actuarial estimates indicate that the added cost of running these boards would be offset ultimately by savings, savings to insurers, physicians, patients, and to society as a whole.

We can be certain that the constitutionality of our plan as with reform efforts in general, will be tested in the courts. However, because it is fairly balanced, and because it embodies direct pro-patient protections that the traditional tort system does not, we believe it will pass muster.

So where does this project stand?

Right now, we are looking for one or more states that are willing to put this proposal to the test, to see if it can achieve all we believe it will. The Utah Medical Association raised dues to create a fund to develop more accurate projections of claims volume and cost/benefit ratios, and to put in place the public education and the political activity process to get this system, with some modifications, tailored to the State of Utah, to be enacted in 1990. This is to be filed in one year. It has carefully evaluated, with a special task force including captive reciprocal insurers, defense attorneys and assorted persons in leadership positions, this proposal. It may modify the plan to (a) maintain a cap on pain and suffering at $250,000, (b) include a provision for periodic payments and (c) the imposition of a filing fee, and (d) require coverage of $250,000 with a catastrophic fund to pay above that amount.

So the targets are:

For **claimants,** this plan would provide more valid claims paid, claims resolved and paid more quickly, attorneys appointed at no cost and causation and informed consent rules that are liberal.

For **physicians,** it would provide a *"reasonably prudent physician"* standard of fault, speed and consistency in liability determinations and awards, reduction of meritless claims and windfall judgments and greater premium stability due to greater predictability of awards.

Finally — and perhaps most importantly — for the **public,** the proposal would offer fairer compensation to more injured parties, better monitoring of physician performance, a more effective and less costly system overall, stabilization of insurance costs, availability of medical services, and maintenance of trust in the physician-patient relationship.

With all this going for it, this new system may well be the answer to the medical liability crisis. It's certainly worth a try.

Addendum

Dr. Nelson has reviewed and accepted the above. We had asked him to comment on Resolution No. 3 passed by the House of Delegates at the 132nd annual meeting of the HMA in Kona as regards to alternate approaches to the problem of medical liability insurance. He responded in two paragraphs, which we include as a part of his address:

> Tort reform, in many areas, is the only achievable process to try and lessen the destruction of the current tort system. Therefore, states must continue to pursue reasonable tort reform measures such as those that have been enacted in California and Utah, while simultaneously seeing if the administrative model (of the AMA) can be achieved in their area.
>
> The AMA has considered having insurance purchased on an event-basis by patients, as you suggest, and found a series of impediments to implementing such a system. One problem is the fact that the patient may not be inclined to buy the insurance, and that laws requiring such purchase would have a great deal of difficulty being enacted.

—The Editor

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—Bob Sevey



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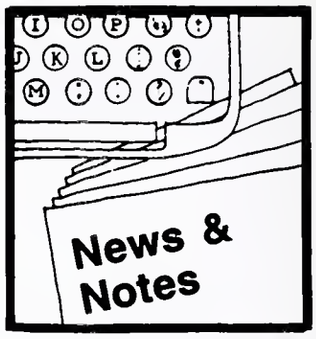
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HENRY YOKOYAMA, MD

Life in These Parts . . .

Al Furuike, reporting on the nurse shortage at QMC, quipped, "The flying nurses will be leaving in December and a new crop will be flying in in January. . . ."

Our intellectual friend and patient, Susumu Fujii, who recently turned 70, observed wryly: "I noticed that people are now relinquishing their seats to me. . . ."

Just as we were beginning to wonder how our dear friend, cherished mentor, literary critic and HMJ founding editor was doing in San Francisco, along comes this precious letter from Harry L. Arnold Jr., dated 25 Nov. 88:

"Dear Henry:

Your lead item in the November issue of the HMJ called to mind an incident which still gives me 'duck bumps' and a slight shiver when I think about it! I was regaling fellows around the table at lunch one day at Straugh with a story in *The Great Escape,* about the prisoner who reproduced perfect apparently mimeographed documents with a camel's hair brush and home-made ink, that could not be told from the real thing, when Bram Vanderstok spoke up in his diffident way and said "Didn't I ever tell you about that? I was the one who did those copies. Let me show you one." And he went down to his office and brought one up, encased in celluloid!

That reminiscent poem of Ralph's was absolutely beautiful! I wish I could have been there. Incidentally it wasn't 'Kawaihou' near which John Lowrey retired — it was Kawai *hae.* Your piece on snoring was hilarious! In fact the whole column this time was excellent — and I'd have been disappointed if you hadn't made one booboo I could catch you out on!

I'm so glad *you* didn't retire from an important job which you do so well! Thanks for sticking with it!

Your friend and admirer,
Harry

(Ed: Thanks Harry . . . Any letter from you is worth it's weight in gold. . . . We will continue to make our unintentional booboos so you will be busy as ever. . . . We do miss your gentle counseling and superb editing around these parts. . . .)

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Life in These Parts

"Phrases well turned — like a pretzel" (Honolulu Advertiser reporter Willian Kresnak's collection of hilarious utterances a City Council meetings)

"We're sitting on a time bomb and it' about to blow up in our faces."

"We haven't had time to discuss this in a intelligent manner — which hasn't stopped u before."

"We might be stepping through a dar door with no bottom on the other side and fal flat on our faces."

"This isn't affordable housing . . . it's nic housing."

"I think it's important that we take a loo at what are killers in our society and eliminat them."

"It's as clear as a pane of white glass."

"I'm still confused. . . . Maybe I've totall lost my mind."

"It was well to note and I was remiss i noting and I'll note now."

"I open my hat to you."

"Amendments are being made by the sea of one's pants."

"What we're good at is small."

"I think that people dying may b detrimental to our visitor industry."

"Here's just a simple-minded ques tion. . . ."

"I like the concept conceptually."

"I'm just discussing the discussion stag now."

"We live on an island, there's water around us."

"Although I'm not a member of this committee and I'm here to listen and observe, my silence does not mean anything."

"May 1 to May 10th — that's one week."

Elected, Appointed & Honored . . .

Karen Breakstone of Kamuela was electe to fellowship in the American Academy o Pediatrics.

The newly formed American Heart Associa tion West Hawaii Division has as medica liaisons, Mort Berk, Edward Silver, an Lambert Lee Loy. . . .

Sportsmen

GOLFERS. . . . The 1988 HMA Gol Tournament winners were: Warren Ono — Low Net with net 70; Ronald Resnick — Low Gross with 72; Medical Rep: Wally Kunimitsu — Low Net with net 66; Women's Low Net Nellie Dang with Net 72.

10-K RUN: Men's Division: Royal Ran dalph Jr.

TENNIS: 1st Place: Gregory Park; 2nd Place: James Bendon.

'hysicians peak Up

Usually reticent John E. Aoki, Kailua loist, wrote the following blistering letter to e editor in November: "Managed care is the w 'buzz' word in medical-care delivery. lphabet soup' medicine is another term used describe the new thrust in cut-rate medical re with its IRA, PPO and HMOs. What oes all this mean? The bottom line is money. Cost-containment is the real issue. Your surance company has signed a contract with doctor or a group of health-care providers at stipulates that they will provide medical re to the patient for a discount. You, the tient, must in turn seek care only from ose doctors who have signed the contract. These doctors must remain true to their ofessional ethics to provide the best care ssible without overutilizing expensive high-chnology procedures. If there is an excess of remium money over what was spent through st-containment, then the money is divided mong the profitable providers.

These bonuses can be as high as 50 percent f fees and can be a powerful incentive to hange practice patterns. If there is a deficit, en it will have to be made up by higher remiums or less distribution to the physi-ians.

The dangers for a patient in such a system re if the financial incentives for under-eatment becomes overwhelming or if the hysician's interest for the insurance company ecomes greater than that for the patient.

Fee-for-service, private practice medicine is he best avenue for quality medical care. Your ersonal physician has your interests in mind nd will do what is necessary to care for your llness no matter what the cost.

He is the one who you should trust during imes of illness or crisis. Physicians should ake care of patients, not the health insurance ompanies. . . ." (Ed: Thanks John . . . hat's telling like it is. . . .)

Conference Notes

(Excerpts from a most practical lecture on Dementia by neurologist Melvin Yee on 9-3-88)

Epidemiology: 110 new cases/100,000 population/year . . 1% of population over age 40 . . . 7% of population over age 80. . . . n U.S., 1.2 million with severe dementia . . . 2.5 million with mild dementia . . . 65% of nursing-home patients are diagnosed as Alzheimers. . .

"Patients with dementia have higher morbidity and mortality. . . ."

A. *Dementia History:* a. Determine baseline function (related to education, occupation, hobbies, interests) b. What changes have occurred?

B. *Mental Status Examination:* a. Name and location of places. b. Today's date. (month and year) . . . c. Age: when born. (month, year) . . . d. President of the U.S. . . . and before him . . . e. Grocery list . . . f. Grandchildren (number and names). . . .

C. *Neurological Exam:* a. Grasp reflex b. Glabella tap and blink reflex c. Sucking reflex

re: *Misdiagnosis of dementia:* 10% to 30% error in three-year follow-ups

Ddx: *Delerium*
Acute
No path changes
Reversible
Illusions, hallucinations

vs

Dementia
Chronic
Demonstrable path
Not reversible
None

re: *Benign Forgetfulness of Aging:* "Do not make the diagnosis of dementia based only on a mild forgetfulness of a patient who is still functioning well in his environment."

re: *Pseudo-dementia of Depression:* Affect-looks depressed. . . . Subjective complaints exceed objective symptoms. . . .

D. Basic Medical Workup of Dementia (Alzheimer's Disease is a disease of exclusion)
CT Scan
CBC
Blood Chemistry
Thyroxine level
Vit B12 assay
UA
CXR
Serology for Syphylis
EEG
Electromyography Drug screen
Urine and blood for heavy metals
Psychological tests
EST exam

EEG Abnormalities: 75% in dementia . . . 17% in non-dementia

Nuclear Brain Scan: Bilateral loss in Alzheimer's

E. Path Findings: a. Critical atrophy, b. Loss of neurones, c. Neurofibillary tangles, d. Senile plaques

Conference Notes

(From Tom Whelan's superb lecture on "Crush Syndrome" at Mabel Smyth on 9-23-88).

Definition: Crush syndrome is a clinical syndrome that occurs only after extrication of an extremity following a massive crush injury for several hours. . . .

The Sx's and Sy's of the full blown syndrome are: a. Rapid swelling of muscle. . . . b. Hypovolemic shock. . . . d. Myoglobinuria (2° rhabdomyolysis). . . . e. Oliguric renal failure (2° hypovolemia and tubular obstruction). . . . f. Cardiac arrhythmias (2° acidosis and hyperkalemia). . . .

re: Compartment syndrome: Crush syndrome causes muscle swelling in tight fascial compartments that produce a vicious cycle of pressure — swelling — ischemia-more swelling — more compartment pressure. . . .

*Acute renal failure and myoglobinuria can occur from rhabdomyolysis without compartment syndrome. . . .

Crush syndrome occurs in a. Natural disasters (earthquakes, mud slides); b. Man-made disasters (bombing and artillery raids); c. Self-made disasters (the crushing effect of drugged, comatose body on own extremities)

Rhadomyolysis without muscle pain or swelling and with only myoglobinuria and renal failure has occurred in 50% of cases. . . .

Treatment of compartment syndrome: Early fasciotomy when distal pulses are absent and the swollen muscles can be demonstrated to be viable. . . .

(Continued on page 44)

CLASSIFIED NOTICES

To place a Classified Notice, MEMBERS, please call Association Office at 536-7702. NON-MEMBERS, please call Leilani at 521-0021. 4 line minimum, approx. 5 words per line. Payment must accompany order.

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Conference Notes

Visiting Professor David Liebermann lectured on "Reflux Esophagitis" at Mabel Smyth on 10-7-88. . . .

re: Reflux as a great pretender: "Esophagitis experts make a living from heart burn and heart burn in turn makes it living hell for the experts. . . ."

re: Treatment of Reflux: "The art of medicine consists of amusing the patient while nature cures the disease. . . ." (Voltaire)

re: Conservative Management: a. Elevate the head of the bed. . . . b. Weight reduction. . . . c. Avoid tight garments. . . . d. Discontinue alcohol, tobacco and drugs, which lower LES pressure. . . . e. Avoid food intake three to four hours before bedtime. . . .

*Avoid fatty meals, chocolates and drugs eg. Calcium channel blockers and nitrates. . . .

Pearls of Wisdom: a. "Today's facts are tomorrow's fallacies. . . ." b. "The pure and simple truth is rarely pure and never simple. . . ." (Oscar Wilde)

Conference Notes

(Visiting Professor from U of Florida, Carl Pepine lectured on "The Role of Ambulatory Monitoring in Detecting and Evaluating Myocardial Ischemia" on 12-9-88)

Ambulatory Ischemia: Detection of ST depression by 48-hour AEM (ambulatory electrocardiographic monitoring) is very important because of multiple deaths occurring among these patients.

Unstable Angina patients with ischemic ST seg changes on AEM have unfavorable outcomes. . . .

Holter and ETT: Holter neg and ETT neg = good outcome. Holter positive and ETT negative = poor outcome. Holter positive and ETT positive = Worst outcome.

AEM record: Faithfully reproduced in vast majority of cases even with low frequency recorders (by resynthesizing and recreating EKG patterns)

Specificity of ST shifts on AEM (Ages 23 to 60):

Specific: Ischemic type ST depression	2%
Non specific:	
T wave peaking	37%
T wave inversion	19%
T wave flat	35%
ST elevation	5%

*Israeli Study showed 3% ST depression (ischemic type) in normal population. . . .

Patient Selection in AEM for Ischemia: 1. CAD, 2. ETT with ≥ 1.0mm ST depression at HR less than 160 or < Stage III, 3. No conditions which influence ST segment (eg digoxin, LBBB, WPW), 4. No position or hyperventilation changes, 5. Pt understanding of test and equipment, 6. Pt able to change tapes, batteries and keep diary.

Definitions: Ischemic episode = ST seg depressed ≥ 1.0 mm for 60 seconds. ST seg elevation ≥ 2.0 mm.

Angina episode = Any diary report of chest discomfort.

*Change in ischemia/directly correlated with HR

*Beta Blockers (metoprolol) flatten out cillations

Duration of AEM: 55% of pts h ischemia in 24 hours. 72% have ischemia i hours — Therefore should monitor at leas hours.

Monitor directed nitroglycerine adminis tion: 50% reduction in ischemic episodes w patient gives himself a nitro tab with t demand of monitor. . . .

Summary: Emerging role of AEM monitoring patients with ischemic episode natural environment — i.e. not only detect for arrhythmia. . . .

Oncology Dialogue

A 54-year-old PoGo single woman ha palpable lump in the axillary portion of left breast. Surgeon Vic Mori did an out tient needle biopsy and followed this with usual bone scan, liver scan and Xero mam gram. Radiologist Howard Arimoto descril a

2cm² mass on the mammogram. Vic di conventional modified radical. Patholo Larry McCarthy reported a poorly differ tiated ductal carcinoma with 11 posit nodes. The ER was 152 and PR 36, viz b highly positive. Moderator Glenn Koka asked: "How about post-op mediastinal ra ation?" Radiotherapist Charles Yamashiro ported that the current trend was to do t cycles of chemotherapy and then follow w radiation. . . . Glenn asked, "How ab Tamoxifen?" Charley replied, "I'll leave t decision to the medical oncologists." Crus ing pathologist Grant Stemmerman who c likes needle biopsies and prefers great chu of specimen questioned the propriety of t office needle biopsy. . . . Stemmy felt this w a matter of logistics and advocated an cisional biopsy that could give hormonal says. . . . Glenn concurred with Stemmy: don't do needle or aspiration biopsies a even with outpatient surgery, I do op biopsies. . . ." Fellow surgeon Bill Morio who does true cut needle biopsies argue "There's more than one way to skin cat. . . ."

CONFERENCE NOTES. . . . (VP Tee Guidotti lectured on "Occupational Me cine" at Mabel Smyth on 12-23-88)

Priority Categories: 1. Occupational lu diseases, 2. Musculoskeletal diseases (boc trunk, extremities), 3. Occupational Canc 4. Occupational Injuries (amputations, fra tures, eye loss), 5. Cardiovascular diseases, Reproductive toxicity, 7. Central and p ipheral nervous system disorders, 8. Noi induced hearing impairment, 9. Occupatio skin diseases, 10. Psychogenic Illnesses (i cluding substance abuse)

Incidence: "Back injuries are most co mon. . . . Early return to work critical. . . All other categories: Dermatologic: 1/ Ophthalmologic: 1/4; Lung: 1/8 System 1/16; Others: 1/16.

Three Factors in Occupational Disease Agent plus Environment plus *Host = Disea*

Recognition: A. *Occupational History:* Past occupational health problems, 2. Prote tive equipment, 3. Known health hazard,

) duties, 5. Industry, 6. Dates and whether
or part time, 7. Work place.
3. *Occupational Exposure Inventory:* a.
alth check list. . . . b. Exposure check
. . . .
C. *Environmental History:* a. Home en-
onment, b. Passive exposure, c. Advoca-
nal exposure.
Assessment in Occupational Disease: 1.
uctural changes, 2. Functional changes, 3.
gnosis and pathophysiology, 4. Exposure
cumstances, 5. Behaviorial causes. . . .

ncology Dialogue

A 62-year-old man had surgery for rectal
cinoma. . . . Moderator Glenn Kokame
faced the issue of impotence with radical
tal surgery. . . . "The majority of patients
h abdominal perineal resections become
potent. . . . Somehow you disrupt the
rves. . . ." Fellow surgeon Bill Morioka
s more optomistic: "They get retrograde
aculation, but can still perform." Surgeon
b Oishi related, "My experience is that 60
70% become impotent. . . ."



Over the Editor's Desk

STEPHEN R.P.K. BRADY, MD

IDS: A GUIDE FOR THE PRI-MARY PHYSICIAN, **edited by King K. Holmes, MD, and Arno G. Motulsky, MD. Publication date: August 15, 1988**—"My involvement with AIDS and related conditions as challenged me more than any ther condition I've encountered to ngage the science, the art, and the olitics of medicine," says Seattle nternist Julia Smith, writing in *AIDS: A Guide for the Primary Phy-ician.* "There is more information han any generalist can keep up

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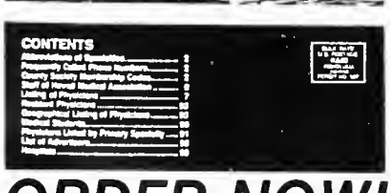
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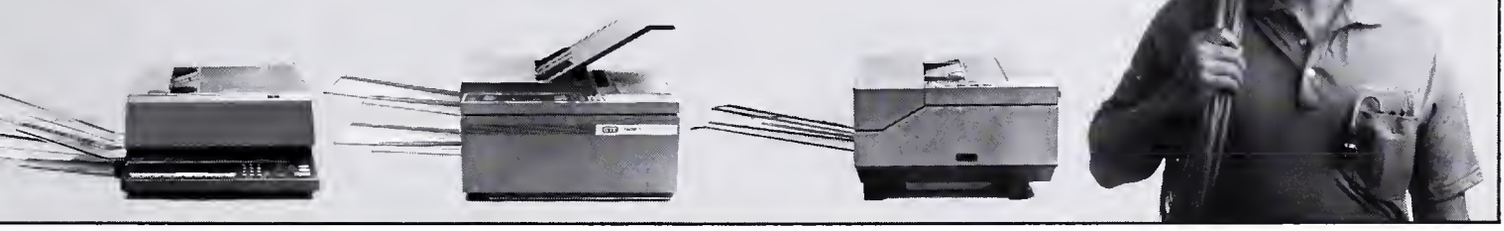
with."

Which physicians should take care of patients with AIDS? The growing consensus is that primary-care physicians, including both generalists and specialists, will play a central role in recognizing, treating, and managing infections of human immunodeficiency virus, the causative agent in acquired immunodeficiency syndrome (AIDS). Primary physicians are uniquely qualified to coordinate subspecialty consultations for multisystem diseases and to manage the complex, long-term psychosocial needs of patients with progressive, fatal illness.

AIDS: A Guide for the Primary Physician is designed as a practical and up-to-date reference for physicians — and other health-care workers — who face an intimidating array of medical, scientific, and technical questions against the background of many social, political, and economic problems. It provides a foundation for further knowledge in this rapidly changing field. Major scientific and clinical points are clarified in charts, graphs, and illustrations.

The guide originated as a special edition of *University of Washington Medicine* magazine, a publication of the University of Washington School of Medicine. Editorial direction was provided by Dr. King K. Holmes, chief of the Department of Medicine at Harborview Medical Center in Seattle and professor and vice chairman of the University of Washington Department of Medicine, and by Dr. Arno G. Motulsky, professor of medicine and genetics and director of the University of Washington Center for Inherited Diseases. Holmes is an expert in infectious sexually transmitted diseases and Motulsky is editor of *University of Washington Medicine.*

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HAWAII MEDICAL JOURNAL

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Care of the mentally ill

The JOURNAL is pleased to devote this entire issue to the subject of the care of the mentally ill in Hawaii. Denis Mee-Lee is the issue editor, and he is to be commended for assembling an impressive array of articles whose authors delve into the complex problem of how best to deliver modern psychotherapeutics and sophisticated supportive services to a segment of our population badly in need of such.

We start with State Health Director John Lewin's visionary "Meeting the Challenge" and close with Mee-Lee's refutation of the stigma of being last among the states in the quality of care dispensed to the Severely Disabled Mentally Ill (SDMI). The reader will notice that the emphasis in this approach is indeed on the "chronically" mentally ill, otherwise designated as the SDMI, in the sense that each patient probably has a normal life span and will need care throughout those years.

Aside from the grave problem of cost — an ideal program of care will be a large fiscal burden on the State, on our society of human beings, one that we must carry without complaining — it also means that we must humanely accept the fact that it entails pretty close to a one-to-one system of service and perhaps even two- or three-to-one.

The reader will find articles that exhale optimism; he or she will also find treatises that are depressing in their aura of extreme pessimism. However, it behooves every practicing physician in the State to become aware of the serious issues involved, because there is not one doctor's office that will never encounter such a patient who walks in the door.

The JOURNAL is proud to assemble this compendium of information on one subject, of such importance to the entire community, within its covers.

J.I. Frederick Reppun, MD
Editor

FROM THE DIRECTOR OF HEALTH

Meeting the challenge of Hawaii's mental health crisis: New opportunities and innovations in the state mental health system for the 1990s

John C. Lewin, MD*

Recently, Hawaii's mental health care system has been in the news because of its alleged infamy as one of the poorest systems in the United States of America today. Hawaii has not always been considered a state with a conspicuously poor commitment to mental health. The Department of Health (DOH), the oldest department of health in the United States of America, was formed in 1850 by King Kamehameha III. In fact, Kamehameha III, recognizing the importance of developing programs in mental health, was one of the earliest political leaders in history to support government-sponsored mental health services.

* Director,
Department of Health
State of Hawii

A great deal of the traditional healing practices of the pre-Captain Cook Hawaiians included various forms of mental health services, some of which are still in practice today. Ho'oponopono is a practice that assists in smoothing troubled relations between family members, relieving guilt from past actions and even providing mechanisms for healing negative relationships or feelings that may have existed for many generations among involved individuals. The concepts of Lokahi and the spirit of Aloha embody societal harmony, balance, compassion, and health, including mental health. The strong 'Ohana connections that have characterized Hawaiian extended families and have been adopted into the family lives of other ethnic groups here still support a variety of services at the community level in Hawaii that are unique and special in America today. A large number of the people in

(Continued)



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modern Hawaii who are suffering from mental disorders are being cared for at no cost to the government by their families. This is one way in which we have been able to "get by" in Hawaii, albeit poorly, with so low a funding level for mental health.

Nonetheless, a recent national survey of state mental health services and systems has rated Hawaii as 51st in the nation: We have the dubious honor of the worst rating of all the states, including the District of Columbia, in 1988. The first "bottom rung on the ladder" rating came in 1986. Since then, according to Dr. Fuller Torrey and his national staff, Hawaii has "retrogressed" in many areas. Although the study recognizes that the State of Hawaii assumes the largest part of the responsibility for providing necessary mental health services for the mostly indigent people who suffer from chronic mental illnesses, there is considerable criticism of the University of Hawaii and the health care establishment in general. It appears, at least in these surveys, that our entire State has abandoned those who suffer from mental illnesses.

Not only is this situation seemingly revealing a lack of compassion and societal integrity, it is very uncharacteristic of Hawaii's usually very socially conscious concern for the health of its citizens. After all, we are the healthiest state in America. Furthermore, the lack of coordinated services for the seriously disabled mentally ill (SDMI) in Hawaii forces most of the affected individuals into costly institutionalizations, unnecessary police and criminal court proceedings, and excessive expenditure of welfare dollars that could be otherwise used for basic services. In the states that have been rated among the "top 10" in mental health across America, these patterns have been replaced with successful employment and housing programs, with support systems for families who maintain the care of the mentally ill in their own homes, and with measured reduction of crime and unnecessary criminal justice and court expenses. A new and revitalized system for mental health for the State of Hawaii will finally put an end to the "revolving door" phenomenon in which mental health patients bounce from living as street people or plaguing their families and neighborhoods with their problems, to requiring frequent police custody and recurrent costly hospitalizations. Our present systems, including rehabilitation, employment, case-management and housing, actually encourage the "revolving door" cycle.

The DOH employs more than 800 employees in its Mental Health Division (MHD). We spend over $31 million for mental health, although this is considered very low on a per-capita basis by comparison with national standards. Despite some very dedicated and concerned employees at our Hawaii State Hospital (HSH), it lacks Medicare accreditation and has never been accredited by the Joint Commission on Accreditation of Hospitals. The staffing ratios at the Hospital are extremely low, and conditions for patients are, in some instances, rightfully considered inhumane. For example, penal code inmates who will be spending most of their lives in the forensic unit of the Hospital must live in overcrowded conditions. A tiny, unlandscaped area is provided as their only space in which to be outdoors for exercise. This area is supposed to contain a running track, a basketball court and volleyball court. In reality, it is a tiny, muddy area encased by a chain-linked fence, with a basketball hoop nailed to a coconut palm.

There are many unfilled and vacant positions at the HSH, not only because the pay is low, but because the working conditions for employees are very undesirable. Real therapy programs are often not possible to implement.

In other words, the State is not only unjust to its patients, but also to the employees. Most of the young aides, the people who are most closely associated with the patients and their care, have been relegated to doing jobs of doling out cigarettes as a crude form of Pavlovian reinforcement for "good behavior." These aides are often young people, hired without previous work experience, and certainly without specialized mental health training essential to making the "front-line" of the system therapeutic and humane.

With the mentally ill unable to develop a constituency among the voters and with those in political control of society, underfunding has been a real problem. This has resulted in most mental hospitals across the nation functioning more like prisons for the SDMI.

In Hawaii, the situation has been made worse by virtue of many unnecessary forensic admissions made by the courts for prolonged stays in our HSH. Many of these individuals are guilty only of minor misdemeanors, are not seriously mentally ill, and would be best served outside the institution and at the community level. Consequently, the Hospital has become grossly overpopulated, further adding to the woes of the already overworked staff.

Although, the State of Hawaii has 8 community mental health centers (CMHC), it may not be quite correct to state that we have an emphasis on community mental health services. Often, the SDMI choose not to use our community health centers, feeling that it is awkward or shameful to visit these places and are not designed to serve their needs. In essence, the mentally ill are not people who cooperate by being reliable in coming in for services and by keeping scheduled appointments.

The new philosophy in mental health is to "go out into the streets" where these people are living, "hanging-out," or trying to cope. The DOH has been requesting funds for more than a decade to expand community mental health services. Again, lacking a real political constituency, the cries of the mentally ill have gone unheeded. Only now, under the administration of Governor John Waihee, have things really begun to look up.

Is Hawaii's system really as bad as it has been rated? This question haunts many of those dedicated employees who have been working so hard in our programs. The truth is that probably Hawaii does not deserve to be rated 51st. On the other hand, let us take advantage of that rating, which is based on actual financial and service-related statistics, to set high standards for ourselves and

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for our patients. The reason that we may not be as bad as we are rated has to do with the things mentioned at the beginning of this article: The Aloha spirit, the strong 'Ohana and family support networks in Hawaii, and the lack of freezing temperatures and unbearable weather conditions.

Many, if not most, of Hawaii's mentally ill are being cared for by their extended families. These families have been struggling to provide what care they were able to muster with little or no help from the State. The families have fully recognized that the CMHCs, although staffed with well-meaning and dedicated individuals, are simply not designed to deal with the day-to-day problems of the SDMI. New concepts like "clubhouses" where clients gather together for recreation, conversation, socialization, and gradual involvement in prevocational and, eventually, in vocational training, represent new ways of luring clients voluntarily off the streets and out of their houses, to begin a therapeutic program. Through a community-based organization called the Families and Friends of Schizophrenics, we have developed our own first "clubhouse" in Hawaii. The DOH is also in the process of opening a clubhouse in Honolulu. We are funding a similar small facility on Kauai already, and much more is planned. But these are only small first steps. The clubhouse, a place where the mentally ill actually choose to go for daily activities, needs to be associated with a strong housing system for those who lack housing, needed supervision and advanced job training services. Case managers to follow daily activities of each individual patient, and to give psychosocial support, training, medication, and therapy services also need to be funded.

These are the kinds of things that have been aggressively sought by our Department during the past two years, but without having been put together into a comprehensive, cohesive "plan." Now, finally, we have a plan that we can believe in. Furthermore, we have the commitment and support of several of our key legislators and that of the Governor. A new "golden era" for meeting the needs of the SDMI seems to be dawning.

Perhaps our "No. 51" rating has really turned out to be a blessing in disguise. The long lack of commitment by society in general to the problem of mental illness is being turned around as people recognize that we in Hawaii have a major problem to solve. The impact on the Legislature and the efforts of health professionals are increasing as this recognition is becoming more widely shared.

The Mental Health Association, long an advocate of community-based mental health services and of necessary corrections within the mental health system, seems to be in disbelief that real progress is finally being made. Other organizations, such as the Families and Friends of Schizophrenics, and consumer advocacy groups made up of present and former patients, are working with the Department of Health in this exciting evolution of our statewide system. In the past, these organizations have felt the need to spend much of their efforts in criticizing and even attacking the State system and its many inadequacies. In many ways, this has been demoralizing to the employees of the State who have been making their best efforts in spite of great deficiencies. Hopefully now, Hawaii will be able to bring these constituencies together with our State system to effect, through the synergistic efforts of all concerned, the changes needed.

Another important issue is manpower. We lack sufficient specialized nurses, social workers, vocational rehabilitation workers, and many other kinds of health professionals needed to deal with the mentally ill.

I have already mentioned the need for special training for the aides who work with the mentally ill in the hospital setting. Family-support advocates and case managers are in the process of being trained at the present time. Some of the case managers will undoubtedly be individuals who are former patients themselves. This is taking services to the streets.

The two professions that *are* in sufficient numbers in Hawaii are physicians and psychologists. Hawaii has a very high ratio of both psychiatrists and psychologists as compared with other states. Why then are so few of these highly specialized and key people available to the most needy patients? Perhaps this has been because adequate reimbursement has not been made available. Another factor is that the SDMI are among the most difficult patients with which health professionals must deal.

I have always considered it a privilege and a wonderful experience to be a physician. However, I am not proud of the recent tarnishing of our reputation as a humanitarian profession. Too often we physicians have been linked with the "almighty dollar" as that which most strongly motivates us. Obviously, this motivation could be characteristic of Americans in general, not just physicians. Nonetheless, when it comes to the mentally ill, a greater effort must be made by physicians to assist as the health care team leaders in the development of a new and revitalized mental health system. This entire revitalization of quality mental health services in Hawaii is contingent upon the support of psychiatrists and primary-care physicians.

Clearly, the DOH must work closely with the Governor and the Department of Human Services to increase Medicaid reimbursement for the care of mental illness. We must also fund outside community services so as to assist psychiatrists in providing care. While we are making plans to increase the financial resources available for the care of the chronically mentally ill, we must also bring the University of Hawaii and its Schools of Medicine, Nursing, Public Health and Social Work more closely into the process of developing the needed manpower we require.

Finally, the new system of care that we plan is as much a change in *attitude* on the part of the health care professions and society in general, as it is a change based on increased staffing and funding. In the past, a great lack of understanding has characterized our approach to mental illness. Until very recently, health professionals were still dealing with schizophrenia as if it were a product of bad parenting or of environmental factors. Now, with the exciting news of genetic markers in schizophrenia

and manic depressive disorders, there is new hope for actual cures for these kinds of problems. Once the protein or enzyme products of gene expression lacking in schizophrenia can be elucidated, who knows? Real chemotherapy may be coming! Of course, the treatment of the seriously mentally ill has been very much transformed in America in the past decade already. It is time for Hawaii to participate fully in these changes.

Again, physician leadership will be essential to our success in changing our attitudes toward treatment. Within the next 2 years, the Administration will be recommending a multimillion-dollar increase in funding. Much of that funding will go to solving our primary problem of insufficient staffing, but most of that funding will be going to the development of community-based services.

More than $4.5 million is being requested in the present biennium budget from Capital Improvement funds to buy housing for the mentally ill in communities all across the State. Housing for more than 500 people is planned over the next 5 years. The housing will be complemented with staffing so that the individual residents will receive needed services. Among the levels of housing will be crisis houses, respite houses for families with individuals in crisis, intermediate care houses and independent living facilities.

Case managers are being hired, trained, and assigned so that each and every chronically mentally ill individual will be in contact with someone with whom he or she can relate on a weekly or even daily basis. As needed, a whole new array of psychosocial support services is in the development stage. Various clubhouses will be developed. We plan to get at least one-half of the people presently on the welfare roles off welfare and into jobs. Other states are proving that this *is* possible. These changes will save the State untold millions of dollars each year, while providing the most compassionate and therapeutic situation for our clients.

We are very fortunate to be building a new Hawaii State Hospital. Although this will be a small part of the overall community-based system, it is an important part. Instead of a mental health "prison," it will be a truly therapeutic institution, accredited by the Joint Commission on Accreditation of Healthcare Organizations.

Most importantly, the mechanisms for financing mental health are going through major changes. The Hospital budget will be separate and independent of the mental health budget; the latter will be apportioned to all the various CMHCs. Even the courts and corrections programs are destined to include in their own budgets coverage for in-patient care of their "clients." Thereafter, when one of these CMHCs decides to admit someone into the hospital for treatment, it will be paying the per diem costs for that treatment out of its own budget and become responsible for the care plan, follow-up, and discharge plan of the patient. The Hospital will begin to function much as a private hospital does. The incentive will be for the centers to keep their funding and provide adequate community-based services and follow-up for their patients, rather than "dumping" patients on the Hospital to save themselves money and frustrations.

This whole new system of community-based care, and community-based financing of mental health is evolving under the auspices of a $2.5 million grant received from the Robert Wood Johnson Foundation. As one of 8 U.S. cities originally selected for this grant program, Hawaii is fortunate to be participating with the Foundation over the next 5 years. The grant brings us new ideas, national expertise, and a whole variety of parallel experiences from other states from which to learn and self-correct.

Our program is guided by a new Governor's Subcabinet Committee on Adult Mental Illness created by the Governor to work out bureaucratic problems. Working with our various community-based, mental health advocacy organizations, the DOH is now able to say we really have a plan that we believe in. This "clarity" is the power that we have been lacking.

I am grateful to the Hawaii Medical Journal for having the timely insight to dedicate an entire issue to mental health care in Hawaii.

Certainly, it is a great deal more pleasant for me to be writing this article now than it would have been even one year ago. Lacking a clear and coordinated plan for our State, our Department felt somewhat helpless and hopeless in the face of our enormous and conspicuous deficiencies. A new optimism is alive in the Department of Health under the direction of our Acting Mental Health Division Chief, Alma Takata, and her staff. A constituency of support is forming, and my fellow employees see now that help is on the way. The Governor is with us and the Legislature seems ready to join in.

As we work toward the unfolding of a system that will put Hawaii in the top 5 states dealing with mental health within 5 years, a goal we feel is realistic and realizable, we are most grateful to know that the Hawaii Medical Association and the physicians in the State of Hawaii are joining with the many others who have decided that it's about time that this happens. It certainly is time to work together in providing a humane and effective system of serving and rehabilitating our brothers and sisters in Hawaii who suffer from mental illness.

Citizens' groups rank Hawaii 51st in the nation

Barbara Imbeault*

This special edition of the Hawaii Medical Journal *presents a collection of articles that describe and comment upon the spectrum of health care services for the seriously disabled mentally ill (SDMI) in Hawaii. It is but one of several statewide responses to the publication, "Care of the Seriously Mentally Ill; A Rating of State Programs," by E. Fuller Torrey, MD, Sidney M. Wolfe, MD and Laurie M. Flynn, Second Edition, 1988. Published jointly by the Public Citizen Health Research Group and the National Alliance for the Mentally Ill, first in 1986 and again in 1988; the study sought to compare and rate all states, plus the District of Columbia, using hospital, outpatient, rehabilitation and housing services as indices of care. The published results ranked Hawaii last (51st) in the Nation in its care of the SDMI in both years of the survey.*

On a scale of 1 to 20, no state ranked higher than a total of 14 points across the four categories of care (Table 1: Summary of State Ratings by Points). Additionally, only 12 states showed significant improvement between 1986 and 1988. Hawaii is included among those states deemed to be "going nowhere."

In their Summary Statement, Torrey, Wolfe and Flynn conclude that the ". . . lack of adequate services for the seriously mentally ill is *the* major failure of American medicine and social services." The causes for this failure include " . . . the abandonment of the SDMI by most psychiatric professionals; the rape of public-sector psychiatry by private, for-profit hospitals; the incredible funding maze for these services in which local, state and federal governments are more concerned about shifting the costs of the services on to each other; and dearth of low-income housing for the seriously mentally ill. . . ."

"Hawaii rating from 0-poor to 20-perfect: Hospitals 0, Outpatient 1, Rehabilitation 1, Housing 1, Total Points 3. Direction: Going nowhere."

In 1986, after Hawaii was rated 51st in care for the SDMI, cries of anguish arose, followed by official avowals to improve things. Two years later the anguish and avowals linger on in the air, but nothing much has been done and Hawaii is still in 51st place.

Money is one reason. Rhode Island (ranked 1st) and Hawaii virtually have the same population numbers and the same per-capita income, yet Rhode Island spends $45.45 per capita on mental health services whereas Hawaii spends only $21.45. This ranks Hawaii 47th in spending and earns it the dubious distinction of being the stingiest state in the Nation (per-capita income compared with expenditures) in funding services for the mentally ill.

Besides money, however, one senses that the problems are even more profound. Except for the patients themselves, their familes (e.g. Families and Friends of Schizophrenics), a handful of concerned professionals, and a few State legislators, nobody appears to care. The report goes on to say:

> Hawaii State Hospital is probably the worst public mental hospital in the United States, its bleakness contrasting sharply with the natural beauty and towering backdrop of its setting. A long-discussed renovation plan for the facility is finally under way, thanks in large part to the chief of Mental Health in the State's Department of Health, Alma Takata, and scheduled for completion in 1990. Meanwhile, poor conditions and inadequate services persist, as documented in November 1987 by a 5-part expose filmed by a local television station. Nursing assistants are largely untrained despite the presence of a community college on the hospital grounds. Salaries for mental health professionals are among the lowest in the United States, with the expectation that the professionals will supplement their salaries by doing private practice on State time; the results are predictable. The University of Hawaii's Department of Psychiatry, just over the hills from the hospital provides little help and the monied classes in Honolulu send ill family members who need long-term hospitalization to Mainland hospitals. The Health Care Financing Agency (HCFA) of the federal government has found the State Hospital non-certifiable on several occasions but political clout has resulted in the ruling being reversed at the federal Department of Health and Human Services (DHHS) Regional Office on the Mainland.
>
> Outpatient psychiatric services are no better, despite the fact that the State owns the Community Mental Health Centers (CMHC). Coordination with the hospital is virtually non-existent, and potential hospital readmissions are screened by an emergency room in a private hospital,

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which is an odd arrangement on the best of days. Another major problem is that the CMHC are under the Department of Health, which means that communications from the Division of Mental Health in Honolulu must go through the health officer on each of the separate islands. A mobile crisis team in Honolulu is good, but covers only a fraction of the need. Case managers are coming into operation under the Robert Wood Johnson Foundation grant, but the State was so slow in implementing the program that the grant has been considered for termination. There have been a few laudable efforts to improve outpatient services for mentally ill children. Many outpatient services are provided in private contracts, the total cost being over $8.4 million; much closer scrutiny of these contracts is needed.

Rehabilitation services and housing for the SDMI are marked by a handful of good programs (e.g. Network), but little else. Many mentally ill end up on Honolulu's streets or in its one humanitarian shelter, named the Institute for Human Services. It is a remarkably humane place, and the Kalihi-Palama CMHC provides regular outreach to it. But the number of seriously mentally ill individuals being housed there on any given night is a vivid adverse commentary on Hawaii's public psychiatric services.

So what is likely to happen? The deficiencies of the system in Hawaii are not new; as early as 1975 Kirk and Therrien published a frank critique of the State's psychiatric services, including the observation that after-care planning for the mentally ill did not consist of rehabilitation planning, but merely of insuring that ex-patients would not have to sleep in the streets.

Over the years the State has brought in more consultants and program experts than most other states combined, and their advice has been mostly ignored.

The authors described the methodology for their studies and rating as utilizing 12 sources of data, from returned questionnaires. The study did not, however, include site visits.

Denis Mee-Lee, MD, then chief of the Mental Health Division for the State Department of Health, invited Torrey, Leonard I. Stein, MD, Professor of Psychiatry, University of Wisconsin Medical School and Harry Schnibbe, Executive Director, National Association of State Mental Health Progam Directors, to visit Hawaii and provide first-hand observations of the State's care of its SDMI population. All three responded. Excerpts from the conclusions of Torrey and Stein follow:

> Torrey: "Impressions of State of Hawaii Mental Health Care System for the Seriously Mentally Ill."
>
> Despite the deficiencies of the inpatient and outpatient services, I was very impressed by individual employees of the Division of Mental Health who are trying to improve the system. That Hawaii has the resources to produce a first-

Table 1
Summary of State Ratings by Points

	Hospital Care (0-5)	Outpatient Services (0-5)	Rehab Services (0-5)	Housing (0-5)	Total Points
AL	2	2	1	1	6
AK	2	1	1	2	6
AZ	1	1	0	1	3
AR	3	2	1	1	7
CA	2	2	2	1	7
CO	4	3	1	2	10
CT	3	3	2	3	11
DE	1	1	1	1	4
DC	1	1	1	1	4
FL	1	2	2	1	6
GA	2	2	1	2	7
HI	0	1	1	1	3
ID	1	2	0	1	4
IL	2	2	1	1	6
IN	2	2	1	2	7
IA	3	2	1	1	7
KS	2	1	1	1	5
KY	3	2	1	1	7
LA	1	1	2	1	5
ME	3	3	2	4	12
MD	2	2	2	1	7
MA	1	2	2	1	6
MI	1	2	1	1	5
MN	1	2	2	1	6
MS	1	1	1	1	4
MO	2	2	1	1	6
MT	1	1	2	1	5
NE	4	2	2	1	9
NV	2	1	1	1	5
NH	3	3	3	4	13
NJ	2	2	2	2	8
NM	2	1	1	1	5
NY	2	2	2	2	8
NC	2	1	2	1	6
ND	3	1	2	1	7
OH	2	3	2	3	10
OK	2	2	2	1	7
OR	1	3	2	2	8
PA	2	2	2	1	7
RI	3	4	3	4	14
SC	2	1	1	1	5
SD	2	2	1	1	6
TN	2	2	1	1	6
TX	2	2	1	1	6
UT	3	3	1	2	9
VT	2	4	3	3	12
VA	2	2	2	1	7
WA	2	3	2	1	8
WV	1	1	2	1	5
WI	4	4	2	3	13
WY	1	1	1	1	4
Average	**1.94**	**1.92**	**1.51**	**1.49**	**6.98**

(Continued)

CITIZENS GROUP *(Continued from page 61)*

class system of care, there is no doubt. . . . Its distribution on several islands and ethnic heterogeneity make its problems unusual but certainly not insurmountable. Whether Hawaii has the will to produce a first-class system of care for the seriously mentally ill remains to be seen. . . . the inertia of the status quo and vested interests of individuals who would prefer to keep things as they are should not be underestimated.

. . . Hawaii certainly ranks in the bottom 20 percent of state systems for the seriously mentally ill. It is possible that in 1986 it should have been as high as 44th or 46th rather than 51st; there were more meritorious, though small, programs and efforts than we were aware of at the time. . . . In terms of where Hawaii is going, the present opportunity for change and improvement is impressive. . . . all promise that things could improve substantially. Let us hope that this will be so.

Solution:

The solution to the problem requires a multidimensional approach. . . . initiatives from the Legislature to make it possible for the dollar to follow the patient. . . . If it can be done under present law, it would require the Legislature to support that. . . If it cannot be done under present law, new legislation will need to be passed. There also needs to be strong direction from the central office in terms of the priority that the system needs to address . . . strong support to Center directors. . . . I would recommend that special incentive monies be made available to Centers to develop specialized community programs to stabilize those patients who are presently rotating in and out of the hospital at a rapid rate. . . . My recommendation would be not to spend all of your hospital rebuilding money until you have a better idea of how many beds you will actually need. . . . You will need strong support from your advocacy groups. . . . working together to support issues they are all in agreement with.

Conclusionary Statement:

The mental health system in Hawaii is fortunate in having a significant number of excellent mental health workers . . . there are a number of excellent programs operating. . . . The potential for the State to have a superb mental health system that will truly serve the most seriously ill people in your system is there. To bring that potential to fruition will require some difficult decisions and a great deal of backbone. I am optimistic that it can be done. . . .

REFERENCES

Copies of the documents in support of this article are available at the HMA office.

. . . evolution from past to present

History of the care of the seriously disabled mentally ill in Hawaii

Alma Takata, RN*

Hawaii has a long tradition of commitment to care of the seriously disabled mentally ill. Over the years, some of the more innovative programs and policies were initiated first by the Territory and then by the State to provide humane treatment of this special population in need.

Prior to the late 1950s, the care of the seriously disabled mentally ill (SDMI) took place primarily in the Territorial Hospital for the Insane (now Hawaii State Hospital). Hawaii initiated "deinstitutionalization" in 1958 when the average daily census at the Hospital, the only institution for the mentally ill, reached a peak of 1,232 persons. In that year, a Convalescent Center was established to provide after-care services and day programs to assist persons discharged or on convalescent leave from the Hospital, and to develop skills required for daily living in the outside community. The Center also provided prevocational training linked to vocational rehabilitation services for those able to move on to sheltered workshops or employment.

This program enabled mentally ill persons to return to the outside community to live with their families or

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elatives and in other types of residences. Staff of the Center assisted clients in the change of living arrangements and in securing health, social services and financial assistance to meet client needs. In June 1979 the average daily census at the then-Hawaii State Hospital was 204 and it has ranged between 200 and 250 ever since.

A number of factors, some of them fortuitous in timing, have contributed to the development of community-based resources for the mentally ill as follows:

A major event, that of achieving statehood in August 1959, resulted in reorganization of the new state's agencies and the transfer of the Hospital to the Mental Health Division (MHD), Department of Health (DOH), thus placing institutional and community-based programs under a single administration. Early that same year, joint meetings were initiated with the administrators of tuberculosis sanatoria, who were looking into the feasibility of utilizing their empty beds for other than tuberculosis patients. At the same time, regulations pertaining to nursing-care homes were developed by the Hospital and Medical Facilities Branch, Department of Health. The participation by staff from the Mental Health Division assisted the planning for family-care homes that could be used to provide a responsive residential environment for patients who could not return to their own homes or usual places of residence for various reasons.

In 1960, this combination of events allowed for the transfer of SDMI patients from the Hawaii State Hospital (HSH) to a tuberculosis sanatorium on the island of Kauai, and in succession, to similar institutions on the islands of Hawaii and Maui. Staff of the tuberculosis facilities received training in the care and management of the mentally ill prior to such transfers and participated in the process of screening and selecting residents from their respective islands for transfer. Licensed family-care homes were devised as a resource into which those patients, who had no families to whom they could return, were moved back into the community.

During this period, the State Legislature appropriated special funds to support short-term psychiatric care in general hospitals, for mentally ill patients unable to pay for this type of care. Previously these persons with acute conditions had been admitted to the HSH, where their average length of stay had been 60 to 90 days, as compared to a 7-to-10-day stay by patients hospitalized under private care at the Queen's Hospital psychiatric inpatient unit (now The Queen's Medical Center, a community general hospital that established a psychiatric inpatient unit in 1931). These programs were linked to existing State mental health services and reduced the number of admissions to the HSH.

These alternatives to admission to the HSH interested the National Institute of Mental Health enough to result in a site visit in early 1964 by Dr. Robert Felix, who was then director of NIMH, and some of his staff. This visit culminated in the development of a joint demonstration project between NIMH and the State designed to show ways in which alternatives to hospitalization could be put into place in a rural area. The County of Maui was selected as the site for this project.

During 1964, the State Department of Social Services and Housing (now the Department of Human Services) initiated planning and development of adult family boarding homes primarily to meet a need for this type of residential program for the elderly. This provided an opportunity for the Mental Health Division to participate in planning a similar resource for the elderly mentally ill.

A State Mental Health Plan was developed between 1963 and 1965 with federal support. A major recommendation in the plan was to develop community mental health centers (CMHC) in order to provide six "essential" elements of services, i.e., outpatient, inpatient, emergency, a partial hospitalization/day program, consultation and education. The State of Hawaii was divided initially into 7 catchment areas, each of which already had a number of these elements of services at various levels of development. Emphasis was given to further development of partial hospitalization and to 24-hour-a-day emergency services.

In 1967, additional federal funds for staffing of the Maui project enabled the development of a day program for mentally ill adults who required additional, longer-term support services, in order to be maintained in the community. In 1968, the Convalescent Center was abolished and its staff reassigned to therapeutic day programs that were established in two of the largest catchment areas on Oahu. By 1972 (over an interval of five years), every CMHC in the State had a day program in operation. All of these were linked to vocational rehabilitation services and to private, non-profit, sheltered workshops.

On Oahu, an on-call roster of psychiatrists employed by the State was established in September 1970 to provide emergency services and consultation to a 24-hour information and referral telephone service, then operated by the Health and Community Services Council, for after regular working hours, and on holidays and weekends. Prior to that time, psychiatrists' services were available to the trained volunteers manning this service only during regular working hours. In 1973, the Legislature appropriated funds that enabled the MHD to contract with the Suicide and Crisis Center, for outreach workers to work as a team with the psychiatrists on emergency call. This program has obviated many admissions to the HSH, resulting in more appropriate, short-term patient services in general hospitals. In the neighbor counties, State-employed psychiatrists have provided after-hour emergency services without such support.

Between 1971 and 1973, the resident population and daily census at the HSH dropped to a level that enabled the MHD to transfer 122 hospital staff positions to CMHCs in order to assist in providing services to patients discharged from the hospitals. These staff members, primarily nurses and paramedical assistants, supplemented staff of Center day programs and helped to provide closer follow-up of patients residing in care and boarding homes. Movement of HSH staff to CMHCs was on a voluntary basis, however. A few returned to the Hospital during the first year but the majority remained in the Centers. In addition, a total of 16 fiscal and higher-level

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professional positions were transferred to the Division level (4 fiscal, 12 professional).

Community mental health centers' caseloads have, since their inception in 1966, increased from 2,500 in FY 1966, to 11,774 in FY 1978 and since then. A significant portion of this caseload consists of persons discharged from the HSH. These CMHCs have over the years developed cooperative working relationships with a variety of agencies and groups (such as GROW, Senior Companions), sheltered workshops, vocational rehabilitation, recreational agencies, etc., which provide support services to the seriously mentally ill.

During the 1970s, the rapid increase in private-practice psychiatrists, psychologists, and other professionals, and the almost universally available (although inadequate) third-party coverage for outpatient mental health care (covering more than 95% of the population) meant that more and more of the SDMI could receive private care. Today, probably as many or more of these are attended in the private sector by the more than 300 private psychiatrists and psychologists in the State.

Nevertheless, the overall responsibility for coordination of services, and the provision of comprehensive care, including case management services, has remained with, and become an increasing focus of, the public mental health system.

Summary

Hawaii has often been at the forefront in emphasizing community and coordinated care. The establishment of the Convalescent Center in 1958 and the reorganization in 1959 were commitments to these concepts. The early development of Community Mental Health Centers throughout the State fostered these improvements. The Hawaii State Hospital in the late 1960s and 1970s developed community outreach and follow-up services. In the early and mid-1970s continuity of care of patients was assured by requiring community center staff teams, including the psychiatrist, to follow the patients into Hawaii State Hospital and provide both the inpatient and outpatient care. This linkage between Hawaii State Hospital, the general hospital psychiatric units and the community centers has continued to fluctuate operationally, but close coordination has remained viable.

Recently, the State-funded mental health system has moved from generally attempting to respond to all mental health problems, to a primary focus upon the seriously disabled mentally ill. The State is committed to at least provide coordinated case management for this population, in order to ensure that appropriate long-term care is provided.

The Hawaii State Hospital will continue to be a small part of the treatment system but it is a necessary backup for specialized inpatient evaluation and treatment. To strengthen it, and to make it into a first rate facility, will require a rebuilding program.

Although much more needs to be done, Hawaii has achieved much, and will continue its commitment to provide comprehensive and effective mental health care to this segment of our population.

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BRIEF SUMMARY

CONTRAINDICATIONS
There are no known contraindications to the use of sucralfate.

PRECAUTIONS
Duodenal ulcer is a chronic, recurrent disease. While short-term treatment with sucralfate can result in complete healing of the ulcer, a successful course of treatment with sucralfate should not be expected to alter the post-healing frequency or severity of duodenal ulceration.

Drug Interactions: Animal studies have shown that simultaneous administration of CARAFATE (sucralfate) with tetracycline, phenytoin, digoxin, or cimetidine will result in a statistically significant reduction in the bioavailability of these agents. The bioavailability of these agents may be restored simply by separating the administration of these agents from that of CARAFATE by two hours. This interaction appears to be nonsystemic in origin, presumably resulting from these agents being bound by CARAFATE in the gastrointestinal tract. The clinical significance of these animal studies is yet to be defined. However, because of the potential of CARAFATE to alter the absorption of some drugs from the gastrointestinal tract, the separate administration of CARAFATE from that of other agents should be considered when alterations in bioavailability are felt to be critical for concomitantly administered drugs.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Chronic oral toxicity studies of 24 months' duration were conducted in mice and rats at doses up to 1 gm/kg (12 times the human dose). There was no evidence of drug-related tumorigenicity. A reproduction study in rats at doses up to 38 times the human dose did not reveal any indication of fertility impairment. Mutagenicity studies were not conducted.

Pregnancy: Teratogenic effects. Pregnancy Category B. Teratogenicity studies have been performed in mice, rats, and rabbits at doses up to 50 times the human dose and have revealed no evidence of harm to the fetus due to sucralfate. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when sucralfate is administered to a nursing woman.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS
Adverse reactions to sucralfate in clinical trials were minor and only rarely led to discontinuation of the drug. In studies involving over 2,500 patients treated with sucralfate, adverse effects were reported in 121 (4.7%).

Constipation was the most frequent complaint (2.2%). Other adverse effects, reported in no more than one of every 350 patients, were diarrhea, nausea, gastric discomfort, indigestion, dry mouth, rash, pruritus, back pain, dizziness, sleepiness, and vertigo.

OVERDOSAGE
There is no experience in humans with overdosage. Acute oral toxicity studies in animals, however, using doses up to 12 gm/kg body weight, could not find a lethal dose. Risks associated with overdosage should, therefore, be minimal.

DOSAGE AND ADMINISTRATION
The recommended adult oral dosage for duodenal ulcer is 1 gm four times a day on an empty stomach.

Antacids may be prescribed as needed for relief of pain but should not be taken within one-half hour before or after sucralfate.

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Reference:
1. Eliakim R, Ophir M, Rachmilewitz D: *J Clin Gastroenterol* 1987;9(4):395-399.

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Role of Hawaii State Hospital in the care of the seriously disabled mentally ill

Howard Gudeman, Ph.D.*
Tina Dameron, MA**

The Hawaii State Hospital (HSH) is one element within the total Hawaii mental health system that defines its role and functions according to its relationship with other elements of the system. As the only public psychiatric inpatient facility, the State Hospital's unique role is to provide inpatient care and treatment to patients who are not eligible for hospitalization in the private sector.

Role of the State Hospital in the Hawaii Mental Health System

In addition to the HSH, there are 5 major psychiatric inpatient facilities on Oahu that provide a total of 227 psychiatric beds and 3 Neighbor Island units with 30 psychiatric beds. Currently, there are approximately 490 active psychiatric beds in Hawaii with a fairly even split between the private and public sectors. Coordination and integration of services provided by these facilities are maintained through monthly meetings of an Interagency Council composed of all psychiatric inpatient facilities and related programs and agencies.

The Queen's Medical Center Emergency Room serves as the primary psychiatric triage center on Oahu to screen psychiatric emergencies. The Emergency Room staff determines the need for hospitalization; it coordinates with the Crisis Response System Project (CRSP) in order to identify the most appropriate and least restrictive facility available to the patient. In 1983, the CRSP was designated as the screening agent for the HSH in order to ensure that all appropriate outside community alternative placements have been considered before admitting the patient to the HSH. The CRSP has demonstrated a diversion rate of over 50% and admissions to the State Hospital have decreased by approximately a third.

In addition to working with the private sector hospitals, the CRSP coordinates with the Mental Health Courts and Corrections Team to screen individuals in the criminal justice system in order to divert mentally ill offenders from the jails into appropriate mental health programs and facilities. As the result of this screening process, Hawaii does not maintain significant numbers of mentally ill individuals in city jails who are without psychiatric assistance. Rather, the mentally ill offender who needs hospital-level care is transferred to the HSH for evaluation, care and treatment prior to disposition by the courts.

Goal of Treatment, Target Population and Criteria for Continued Hospitalization

The goal of treatment at the HSH is to increase the patient's willingness and ability to adjust to an outside community setting. It endeavors to return *every* patient to the community at the optimal level of care and degree of restrictiveness most compatible with their overall long-term welfare and well-being.

The target patient populations currently treated at the HSH include: (1) Seriously disabled mentally ill (SDMI) patients who have had repeated community placements but continue to be unable to survive in the community because they lack minimum skills to cope with outside living conditions; (2) patients without resources to pay for private community hospital care and/or whose medical benefits have been depleted and who continue to need hospital level care; (3) patients who are refractory to standard treatment modalities and who require highly specialized, intensive, long-term programs to bring about significant change (e.g. medication-resistant patients and/or those who would benefit from behavioral programs in a prolonged structured and monitored environment); and (4) penal code patients who cannot be admitted to private community hospitals because of their involvement with the courts.

Criteria for continued state hospitalization include clear indications of dangerous behavior to self and/or others, ineffective living skills to meet basic needs that result from a psychiatric disorder, the absence of cognitive skills, and/or impaired judgment to be able to survive safely and independently in a community setting.

(Continued)

* Administrator, Hawaii State Hospital
** Former chairwoman, Hawaii State Hospital Advisory Committee

Treatment Programs at the State Hospital

Overview. Treatment programs are developed in order to meet specific clinical needs or skill deficits of the patients assigned to treatment services, by age, clinical and legal status and the patient's ability to function independently. Patients may be discharged from any treatment service, or may be transferred to other services that are appropriate to their needs.

Adult Service. All non-penal code adult patients are admitted to the Adult Service for evaluation and treatment. Forty percent of the admissions to the hospital are emergency in nature, with imminent dangerousness as one essential element for this involuntary admission.

The goal of treatment activities within the Adult Service is the control of dangerous and/or psychotic behavior and an expeditious return to the outside community. The modalities of treatment emphasize an integration between psychopharmacologic psychotherapeutic activities, such as individual, group and family therapy, and behavioral programs. Other programs include occupational, recreational, and industrial therapy activities. In addition, specialized programs are available for patients with dual diagnoses.

Rehabilitation Service (Pre-community Training). The treatment goal of the Rehabilitation Service is to assist patients in developing the autonomy and independence required for placement out in the community. Three levels of pre-community training are provided as determined by the patient's current behavior and future potential.

1. The primary goal of Rehab A is to control psychotic and/or assaultive behavior in order to enable the patient to live in a well-monitored and closely supervised community placement setting. When patients demonstrate sufficient control over psychotic and/or assaultive behavior and are relatively independent in their daily living skills, they may be discharged or transferred to other programs.

2. The goal of Rehab B is to strengthen the patient's potential for independent living through the training of good work habits and by developing a motivation for productive activity, as a precursor to entering prevocational and vocational programs in the community. Patients with adequate control and who have a community support system are discharged from Rehab B.

3. The goal of Rehab C is to encourage groups of patients who are without adequate support systems to live together in the community and to serve as support for one another. Patients are trained to pool their resources, are assisted in renting an apartment or house, and are placed and supervised as a group within the outside community.

Forensic Service. All mentally ill offenders (penal code patients who require hospital-level care) are admitted to the Forensic Service. The common element of all forensic patients is an arrest by the police as the initial step to hospitalization. In fiscal year 1987, penal code patients comprised 31% of all admission to the State Hospital.

The activities of the Forensic Service focus on 3 major areas determined by the legal/psychiatric status of the patient. The first and most frequent function is the evaluation of the patient's competence to stand trial and the determination of mental illness as the basis for assessing criminal responsibility. Approximately 75% of the forensic patients are admitted on a 30-day commitment for evaluation. At the time of admission, all of these patients require hospital-level care. However, within the 30-day evaluation period, many of these patients are stabilized through medication and are returned to court to stand trial.

In addition, the Forensic Service admits patients incompetent to stand trial (approximately 7%), patients not guilty by reason of insanity (8%), and convicted offenders (approximately 10%) who require temporary hospitalization for treatment of a psychiatric condition.

Adolescent/Children's Services. The Children's Service admits patients between the ages of 6 and 12. All patients between the ages of 12 and 18 are admitted to the Adolescent Unit. In 1987, 83% of the adolescent patients were admitted by court order.

The Adolescent/Children's Services provide comprehensive evaluation and hospital-level treatment to adolescent and child patients in order to facilitate their safe and effective return to the community. Behavior patterns characteristic of the child and adolescent patient include delinquency, destructive behavior, truancy, family discord, poor school performance and substance abuse. In addition, patients may also demonstrate autistic, isolated, withdrawn, and/or psychotic behaviors.

The program activities on the Children's and Adolescent Units are individualized to meet the specific needs of each patient. Activities emphasize close and continued involvement with the patient's family or alternative support system, enrollment in an accredited academic program (when appropriate), and participation in programs that employ peer relationships to promote growth and responsible behavior.

Programs to Facilitate Patient Return to the Community; Post-Hospital Care

Over the years, it has become abundantly apparent that effective community placement of the mentally disabled patient requires close, careful coordination between inpatient and outpatient services. In the absence of such coordination, such patients repeatedly return to the HSH as the community's most immediate solution to its problems. Although expedient, an inappropriate hospitalization perpetuates and increases the patient's dependency and willingness to remain in the HSH.

Efforts to move eligible patients from the hospital and to maintain them in the community have been given high priority by the programs of the Mental Health Division (MHD) of the State Department of Health (DOH) that are structured to discharge patients back into the community they include:

1. **Rehab C Project.** As noted earlier, this project identifies mentally disabled patients who are without significant community support systems, and trains them to live

together while they are in the hospital. The patients are then placed as a group in an apartment in the outside community. They pool their funds and food stamps. Close follow-up is provided by the hospital staff. If necessary, the patient may be returned to the hospital for a couple of days without losing his/her room in the outside apartment. A positive aspect of this project is that the "not in my backyard" prejudice against ex-mental patients does not become an issue because most of the neighbors are not made aware that such ex-patients have moved into the neighborhood.

2. **Ho'opaepae Project.** The target population of the Ho'opaepae Project is the severely disabled mental patients with long histories of hospitalization and frequent failures in previous placements. While these patients are still in the HSH, they are assigned to a special team and are scheduled for systematic, intensive activities. By increments, these activities are scheduled to take place outside in the community, with the goal of motivating the patient to accept a placement.

Once placement is made, the patient continues to receive close monitoring, including 24-hour-a-day emergency response. With the patient's gradual reintroduction into the community, the Project has been able to motivate patients to leave the Hospital and, with close supervision and continued support, has enabled them to remain in the community. Occasionally, a day or two of rehospitalization becomes expedient.

3. **Community Mental Health Center (CMHC) Involvement.** The MHD is currently implementing an initiative geared to reduce the use of the HSH and to increase the care of the severely disabled, mentally ill patient out in the community. The key aspect of this initiative is to progressively integrate the HSH's with the CMHC's budgets, for more flexibility in the expenditure of funds appropriate to the treatment of patients of whatever level of care they may require. If hospital-level care is needed, these funds become available to the hospital. When the patient can be treated on an outpatient basis, the funds would be available to the community centers to support that level of treatment.

Effective July 1, 1988, a "cap" or limit was designated for each CMHC's expenditure of funds, based on its previous utilization rate. When it exceeded its designated cap, it was required to pay for each hospital bed/day over its cap. Each such center received its funds at the beginning of each fiscal quarter as an incentive to help maintain patients in the community as an alternative to hospitalization.

The long-range goal of this proposal was to achieve a viable balance of inpatient and outpatient care with the hospital and community center budgets commingled and expended on the most cost-effective basis. It is anticipated that this goal shall be achieved over the next two biennia.

Relationship to University of Hawaii

An important goal of the HSH is to maintain a strong and active relationship with the University of Hawaii. Active training and research programs within the hospital result in more effective treatment activities. Three hospital administrative clinical positions now carry joint university appointments. An agreement with the University of Hawaii Medical School allows faculty members to serve as the clinical director of the hospital and the medical director of the Children's Program. An agreement with the Psychology Department of the school provides faculty appointment to the program chief of the Rehabilitation Service. The severity of the psychopathology that is characteristic of HSH patients and the long duration of their illnesses require innovative, intensive programs to bring about effective change. Active University faculty persons working at the Hospital will encourage more effective training, program evaluation and research activities aimed at promoting more creative treatment programs.

Construction Project

The State Department of Health is currently in the initial stages of a building project that is designed to replace 159 State Hospital beds that are substandard and out of compliance with accreditation and certification requirements. Groundbreaking was scheduled for September of 1988, with completion anticipated by mid-1990.

The architectural design of the new hospital was developed in consultation with nationally recognized architects and represents state-of-the-art construction specific to the needs of mentally ill patients and the therapeutic activities that shall be provided to them. Careful consideration has been given to promoting and encouraging a feeling of self-worth and a sense of well-being in the patients. The internal space on the wards and the configuration of the buildings on the grounds have been designed to stimulate social interaction and to develop progressive steps toward independence and the capacity and willingness to return to the outside community.

Summary

The majority of the patients admitted to the Hawaii State Hospital have long histories of mental illness characterized by numerous episodes of hospitalization and repeated attempts at community placement. Traditional levels of treatment have not been successful. The structure and control of a hospital setting provides an opportunity to develop and implement highly specialized treatment programs that cannot be duplicated outside in the community.

A careful balance of effective inpatient and outpatient services is crucial to the overall needs of Hawaii's mentally ill. An emphasis on one level of treatment over the other, places an overwhelming burden on the remaining levels of treatment and jeopardizes the well-being of the individual patient and the welfare of the public in the community. The State Department of Health's Mental Health Division acknowledges the need for both levels of care and strives to achieve the comprehensive and balanced system that is required for optimal care.

The general hospitals' role in the care of the seriously disabled mentally ill

Anthony J. Holzgang, MD*

Acute-care general hospitals play an important role in the care of the seriously disabled mentally ill (SDMI), especially in the State of Hawaii. Currently there are 4 private hospitals on the island of Oahu that have acute psychiatric wards: (1) Castle Medical Center has a unit with both locked and unlocked wards; (2) The Queen's Medical Center (QMC) has a unit with locked and unlocked wards as well as a 24-hour psychiatric resident physician coverage for the emergency room; (3) St. Francis Hospital has a small unlocked combined medical and psychiatric unit; and (4) Kahi Mohala, a psychiatric hospital, has a large locked and unlocked unit. In addition, Tripler Medical Center serves military-related cases on Oahu and there are 3 Neighbor Island general hospital psychiatric units. The emergency rooms in the acute hospitals are the frequent entryways to the care system for the SDMI. For many such patients, they continue to be the focus for treatment and, for some, they are almost the exclusive source of treatment.

The emergency room at The Queen's Medical Center is a triage point that is utilized by many resources in the community as a place to refer the SDMI in crisis. The emergency room at Queen's and the Crisis Team are probably the two most important and frequently used mental health resources for dealing with the crisis of these patients. The emergency room at Queen's has 24-hour psychiatric coverage provided by psychiatric resident physicians and 16 hours of social work coverage on most days of the week.

Previous studies of the volume of psychiatric patients in the emergency room indicated that residents and social workers see between 4 and 5 patients a day for an average of between 1,500 and 1,800 patients a year. The volume can vary on an individual day from no patients in a 24-hour period to 14 or more. The Queen's ER is the place to which police bring most patients with "exparte" orders that have been issued by Family Court; they also bring in patients, found in the community, for psychiatric evaluation, using a form called a MH-1 that authorizes them to do so. Finally, patients are brought in from jail for various reasons. Even when the psychiatric ward at Queen's is full, the patients continue to be brought in to the ER for evaluation and disposition planning. There is little reimbursement and no funding available for these services. Approximately half of these patients seen in the ER require acute hospitalization; the other 50% require less restrictive treatment. Frequently, in the case of the SDMI, attempts are made to assess their needs in the social and economic spheres of their lives. There are very few resources available for the staff to do this in the ER.

One resource other than acute hospitalization is the "Day Hospital" at Queen's. This is a program that is limited to a maximum of 20 patients, and is further limited by the fact that Medicaid will not pay for patient care in this program. The Institute of Human Services (IHS), an independent emergency shelter in Honolulu is available to most patients. Unfortunately, for those patients who are referred to IHS by the ER, there is no "linkage" — they are simply given direction how to get to the facility and allowed to walk out.

The Crisis Team, with their shelter and available care homes, is an important community resource to which the people in the ER can refer such patients. Its usefulness is limited by the small staff and the small number of beds in its shelter program. Moreover, it has to cover the entire island of Oahu and may not be available at certain times, resulting in some patients waiting for long periods before they can be evaluated. Financial and housing resources are at a minimum and are almost impossible to find in the middle of the night. The space in the QMC emergency room is at a premium and the residents are frequently under a lot of pressure to "get the patient out."

The ER, besides being the focus of crisis treatment for many patients, also has become the primary-care source for certain patients who are chronic repeaters or users of the ER services. For various reasons, they are unable or unwilling to contact or to link up with the outside mental health services and will repeatedly fall into a crisis and come to the ER. It is also a focus for some very ill patients who are extremely abusive and may not be accepted elsewhere. These patients will come back to the ER time and time again. Frequently, inpatient units are reluctant to take them because of their behavior or because they never seem to get better.

In recent years, the commitment criteria have been

(Continued on page 72)

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broadened by legislation. However, hospitals are frequently full under the current system and lack other resources for patients so that, even if broader commitment criteria could be implemented, it is unclear whether there would be enough acute hospital beds available to take care of all these patients. Furthermore, QMC looks to the State Attorney General's Office for interpretation of laws. The Attorney General's office has essentially been reluctant to enforce some of the newer laws, feeling that these may not be constitutional. QMC has been reluctant to extend itself in order to utilize these laws fully.

Inpatient services at QMC consist of 50 psychiatric beds in Kekela ward, 19 of which are in the locked unit and 31 in the unlocked, or open, unit. This ward runs an average of 93% occupancy and is frequently so filled that it can be difficult to get a patient into the hospital. During calendar year 1986, there were 1,582 admissions to Kekela ward, of which 721 (45.6%) were by direct admission by physicians, 767 (54%) by admission through the ER, and 94 admission by transfers. Of the patients admitted, 238 were involuntary, in which doctors filled out an emergency hospitalization form (an MD-4) for a 48-hour hold; 1,332 admissions were voluntary, i.e the patients consented; and 12 were transfers from other facilities and were already committed elsewhere after a court hearing. Of the 238 patients admitted involuntarily through the ER or directly from physicians' offices, only 19 (1.2% of the total admits, 8% of involuntary admissions) went on to a court hearing. Thus, 98.8% of the patients admitted to the hospital eventually signed-in voluntarily and managed to develop some sense of cooperation with the treatment staff and attending physician. Another way of saying this is that of those who were admitted involuntarily, fewer than 1 in 10 have gone to a court hearing. This means that more than 9 in 10 will sign in voluntarily before the court hearing. The average length of stay on the unit is between 10 and 11 days. Of all the admissions in the past year, 323 patients were admitted with a primary diagnosis of schizophrenia, 89 with affective disorder, 174 with bipolar/manic depressive illness, 95 with atypical psychosis, and 22 with a diagnosis of borderline personality. This is a total of 722 (approximately 45% of all patients) who could potentially meet the criteria of SDMI. These statistics indicate that Queen's provided approximately 7,000 inpatient days to the care of the SDMI last year. These rates are probably similar to those in the other general hospitals on Oahu.

There are areas of considerable difficulty in acute hospital care that involve legal issues. The inpatient's right to refuse treatment is not clear, as shown by recent case law that does not mesh well with statutory law. Another area of concern is the waiting period involved in an involuntary hearing case once the physician has petitioned the court and the papers have been filed requesting a hearing. The patient often must wait 5 to 12 days for the hearing to take place.

There is an outpatient treatment commitment law in effect, but there are problems in its implementation. Another problem area concerns guardianship. In Hawaii, it is difficult to have costly procedures done, in terms of both time and money. These patients who are difficult to manage from a legal point of view, become psychiatric "hot potatoes." They may be passed from one agency to another until serious decompensation ensues, requiring hospitalization; and they can no longer be turned away. This is not an efficient plan of approach to these patients. Overall, the services for the SDMI patients, and the mentally ill in general, do not mesh well with the legal system. This makes it very difficult to get help for them.

Generally, each hospital does its best to provide the patient on inpatient services with an appropriate milieu, including psychiatric and clinical evaluations, medication and treatments, occupational therapy, and social work evaluation. These are essentially left up to each hospital, and there are no particular complaints about how it is done.

Problems arise around discharge planning, however. Various things can go wrong in discharge planning for patients who are not on Medicare, have medical insurance or are not yet on welfare support. It can be very difficult to enter into the mental health care system. Because of the short length of stay for most patients and the attempt on the hospital's part to get patients out as soon as possible, the patients are not fully independently functional when they leave the hospital and find it difficult to navigate their way through the system in order to receive the benefits due them. The result is that many patients don't obtain the resources they need to make it in the outside world and soon find themselves pushed back onto the streets. Another problem, although less important from a patient care point of view but important in keeping hospital wards available is that the hospitals all too often don't get paid.

Housing is a very tough problem for patients. Halfway houses are at a premium and are difficult of access. Other than halfway houses and some community programs, there are care homes or boarding home levels of care for many of the patients. These are frequently not appropriate for some of the SDMI because they provide limited stimulation or programs, it is often left up to the patient to arrange programs on his own behalf. For some patients, the idea of a care home or boarding home seems a very dead-end alternative and they prefer to go back to the streets without any follow-up (or certainly less likelihood of obtaining any follow-up). There are a few places that will take patients who, although well enough to leave the hospital, are still rather confused or somewhat psychotic and require special treatment rather than a care home. As previously mentioned, QMC has a Day Hospital Program that is not accessible to many of the SDMI because Medicaid will not pay for it and it is, therefore, somewhat limited of access. Mental health clinics vary in their quality of service to the SDMI. Some are outstanding, whereas some seem to be (at least from the acute hospital's stand point) mediocre.

Private practitioners, in recent years, have been very reluctant to take Medicaid patients because of the work

of the Medicaid Fraud Unit. The Unit is perceived as being capricious and unfair in its treatment of pyschiatric practitioners. For those who do find room in their practices for dealing with the SDMI, it is frequently difficult to secure other services for their patients such as day programs, social skills training, vocational rehabilitation and housing. The State's Division of Vocational Rehabilitation has an excellent program but it has a long waiting list. Frequently, patients must wait many months beyond the point where they can use the program effectively. Others, of course, don't have a stepping stone to prepare them for this program and therefore languish at a low level of recovery.

The Crisis Response System Project (CRSP) has been a great help in the disposition of very tough cases. Its staff come and evaluate both inpatients and patients in the hospital ER for admission to their shelter or for transfer to the HSH. There is understandable tension between HSH and the acute-care hospitals when facing cases of difficult patients. The acute-care hospitals will be of the opinion that long-term, inpatient care should be provided for certain patients, whereas HSH is frequently reluctant to take them. It can be difficult to get patients into the rehabilitation programs through HSH unless the patients are first screened at the community mental health centers. Generally, the CRSP mediates these situations and, if it is felt that long-term hospitalization is not warranted, they will then help to find places for these patients within the mental health care system.

Summary

Acute-care hospitals in the State of Hawaii are an important link in the spectrum of services provided for the seriously disabled mentally ill. The main problems outlined above have to do with the lack of other services that allow a patient either to avoid hospitalization or to speed him/her from the hospital to a more appropriate level of care. Also, our system seems at times to discourage linkage between the various organizations that provide care for the SDMI and instead, occasionally fosters an adversarial relationship between various parts of the system. This leaves the general hospital with the frustrating job of caring for these patients, at the same time realizing that its care may be for naught because, once the patient gets out of the hospital, follow-up services may not be available. The patient consequently is likely to be unable to function properly and will be back again, decompensated and doing poorly.

. . . these are no small crises

Crisis screening and diversion services

Leonard S. Jacobs, MD*

In Hawaii, crisis intervention services have become an increasingly pressing concern of the mental health and substance abuse systems. Since 1983, the Crisis Response System Project (CRSP) provided mobile crisis intervention services 24 hours a day, seven days a week. This paper describes the community's utilization of CRSP services, with special emphasis on the seriously disabled mentally ill (SDMI).

Purpose of the Project

The Suicide and Crisis Center, a telephone service, began in 1970. A limited outreach program was added in 1973. In 1983, the establishment of CRSP on Oahu provided a comprehensively administered, mobile, multidisciplinary emergency mental health and substance abuse service, available around the clock. CRSP services greatly complemented the outreach assessment, crisis intervention and triage services of the mental health care system.

People undergoing an emotional crisis may be at risk of harming themselves or others. Ignoring this crisis may lead to a more serious mental health and/or substance-abuse problem that will require hospitalization. Those with SDMI and/or substance-abuse problems may be especially prone to overutilizing available medical and mental health insurance benefits without receiving the follow-up and after-care services necessary for adjustment to independent community living[1,2,3]. The SDMI may live a very marginal and impoverished existence without receiving needed services[4,5]. A major CRSP goal was to improve the emergency, crisis intervention, triage and linkage services in order to correct these deficiencies.

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Project Description

CRSP provides a multidisciplinary team approach of psychiatric, nursing, social work, and psychological services. The 8-member team on Oahu works out of a residence in Central Honolulu that can house up to 4 clients on a short-term basis.

The team has agreed to screen all potential voluntary and penal code committed admissions to the Hawaii State Hospital (HSH). CRSP services are now frequently utilized by the police, the courts, general hospital emergency rooms, social and mental health service agencies, private practitioners, and other referral services. CRSP, in turn, makes referrals to various social, medical, mental health, and substance-abuse service providers. Obviously, this clearinghouse referral service is being highly utilized by the community.

Any public mental health service system is challenged by highly confused, upset and behaviorally disorganized people. CRSP provides diagnostic and intervention services within the community as well as access to short-term residential services. The expertise and commitment of the staff help to defuse and structure a client's behavioral and psychiatric problems so that alternatives to hospitalization are practical and effective [6-12].

CRSP complements the Suicide and Crisis Center telephone hotline.

In 1985, the Center handled 13,909 calls. Thoughts of suicide, interpersonal relationship problems, anxiety, fear and loneliness topped the list of concerns. Approximately 25% of the callers are "chronic" callers.

Service Utilization

In 1987, CRSP served approximately 1,400 people. The average number of contacts per person calling was 6, although some people made contact over 100 times. Over 35% had had prior contact with CRSP. There are many SDMI people receiving services. Over 56% of the clients had mental health treatment at a higher level than outpatient care. From July 1986 through June 1987, 625 people (47% of the caseload) were screened for hospital-level services; 484 of these people (36% of the entire caseload) had been referred to HSH by other agents. The vast majority of these cases were SDMI. Over 45% of these HSH referrals were *not* admitted. Of those not admitted to HSH, 75% were not hospitalized at all during this episode of care. Of these cases, 55% were rated as presenting problems of a longstanding nature (not situational). Women comprised 41% of the clients and over 45% were Caucasian. Ages ranged from 10 to 92 years, averaging out at 31. Sixty-nine percent were single, 15% were divorced or widowed. The poverty-based public-assistance program supports approximately 50% of the clients; 24% are considered to be homeless. Geographically, 41% of the clients resided in Honolulu proper (Hawaii Kai to Fort Shafter), 21% in Central Oahu and Leeward Oahu, 10% in Windward Oahu. There have been an increasing number of requests for CRSP services emanating from Maui and Kauai.

Over 60% of client problems involve one of the following 5 issues: Suicide/self-destructiveness, substance abuse, legal problems, schizophrenia and violent assault.

CRSP referral-out patterns frequently involve welfare intake, substance-abuse treatment and support groups, mental health treatment on an outpatient, partial hospitalization or inpatient level, social rehabilitation services, residential services, medical services, and other support services.

Table 1 summarizes our comprehensive rating system results on one-third of our client population. We are dealing with a large number of people rated to be significantly impaired.

The CRSP shelter residence has been well utilized. Shelter services were provided to 219 people in the 9 months ending March 31, 1988, for 703 bed days with an average of 3.7 bed days per client. Only 4.7% of the people residing at the shelter were hospitalized during this episode of care. A large percentage of the shelter recipients were SDMI with active psychotic symptoms. Many of these received a full range of services at the shelter, including psychotropic medication. Significant numbers of substance abusers used the shelter services for detoxification and were successfully referred to residential and outpatient services. Unfortunately, there were several SDMI substance abusers whom we had a very difficult time referring out because of a lack of available follow-up

TABLE 1.
COMPREHENSIVE MENTAL HEALTH ASSESSMENT

Rating Scale: 1-High Functioning; 2-High/Moderate Functioning; 3-Moderate Functioning; 4-Low/Moderate; 5-Low Functioning

AREA RATED	# of Clients rated	Average (mean) rating	# of Clients with poor functioning (rating = 4 or 5)
Physical Health	303	2.50	33
Self-Acceptance/ Self-Esteem	270	3.73	172
Vocational/Occupational	275	3.55	150
Immediate Family	270	3.66	155
Intimate Relationship	262	4.03	199
Residential	275	3.38	140
Financial	263	3.41	123
Decision making/ Cognitive Functioning	274	3.69	158
Life Philosophy/Goals	218	3.38	93
Leisure Time/Community Involvement	199	3.61	106
Feeling Management	250	3.48	125
Lethality to Self (Suicide)	238	2.28	47
Lethality to Others (Assaultiveness)	256	1.87	33
Substance Abuse	175	2.67	64
Legal	224	1.85	29
Mean Rating for all Areas		3.14	

services. We case-managed and temporarily rehabilitated people with psychotic and other disturbed behavior in a non-hospital environment.

CRSP has provided screening services to the criminal court system for those misdemeanor violators who are mentally ill and/or suffering from substance abuse. From July 1984 to June 1985, there were 94 referrals from the police cell block to the HSH. After CRSP screening, 66% were diverted away from admission to the HSH; many received CRSP crisis services instead of remaining within the criminal justice system. Because of our screening at the court level and for HSH, we have become a partial screening agency for civil commitment to the court system[13].

Discussion

This discussion shall be limited to our impressions and experiences in working with the SDMI. This group is very vulnerable to stress. Its members become overwhelmed by problems in controlling their emotional reactions, in evaluating stress factors, in developing a plan of action to cope with stress, in calling upon a support system, and often in having or seeking other resources for survival[14]. These people do improve with comprehensive mental health care, which includes careful individualized case management[15-17]. CRSP provides supportive interaction with the SDMI individual undergoing stress. CRSP provides assistance in controlling emotions, evaluating the stress factors, and developing a plan of action to resolve the stress through identifying with appropriate mature role models. Emphasizing the importance of medication compliance for those under psychopharmacotherapy assists them in maintaining their identities as persons undergoing rehabilitation. Maintaining sobriety, or quickly reinstituting sobriety, and eliminating substance abuse through direct intervention, education, appropriate limit-setting and support association, is likewise important for the substance abuser. CRSP works with the SDMI persons to prevent a regression into their internal pathological psychological environments and identities as impaired individuals. Persuading and manipulating both the client and the care and support system require arbitration and negotiation skills. A feeling of trust between the client and the various providers and support groups must be developed as well as feelings of competence and hope within the person receiving the service[18-21]. The CRSP staff uses these skills during the short times it provides care. Nevertheless, the client often deteriorates for lack of comprehensive case management services. In most instances, we have taken on the task of providing these services with gratifying results.

Observation and Recommendations

In Hawaii, although almost everyone has medical insurance, the coverage for mental health services is limited and inefficiently utilized. Many insurance plans limit outpatient benefits and do not cover partial hospitalization, inpatient and case management services. The nature of an SDMI's problems often leads him or her to refuse individual care or to choose services based on idiosyncratic rather than economic, marketplace, rational reasons. Chronically ill consumers, therefore, may deplete their available benefits without a resolution of their problems, or they may not utilize readily available services because of the nature of their disorders.

In the outside community, on an outpatient basis, the private practitioner and many public clinic programs schedule the patient for one visit per week or less frequently. Everyday stress occurring throughout the week may require more frequent attention; this may be very inconvenient for the provider and usually is not reimbursable to the private practitioner. The client often does not have the internal motivation or cognitive and emotional skills to seek out and keep appointments for mental health services, vocational services, social rehabilitation services, assistance by support groups, etc.

The client may not follow through with medication compliance. The provider is often hard pressed to communicate frequently with the other providers of service on a coordinated basis to continue the individualized treatment program. With this all-too-common situation, the SDMI person may fail to get the needed assistance, may stop medication, may begin substance-abuse behavior and may regress to a point where hospital-level services are again required. The SDMI person is often hospitalized for longer than necessary and discharged without adequate case management follow-up, eventually resulting in the need for rehospitalization[4,5]. Many of the patients seen by CRSP have become so indoctrinated into this previous adverse cycle of care that they frequently request hospital-level services, knowing they will be rehospitalized if they stop their medications and outpatient follow-up visits.

CRSP is intimately involved with the commitment process. The State of Hawaii utilizes its "parens patriae" and police power to force uncooperative, unwilling and gravely disabled people into psychiatric hospital units and hospital emergency room facilities for evaluation and treatment when there is reason to think that the individual is mentally ill and/or suffering from substance abuse, presenting some immediate danger to self and others. As previously mentioned, of those SDMI persons referred to HSH, CRSP prevented hospitalization in 61.8% of the cases, whereas an outside professional had deemed hospitalization necessary.

Implications

For some time, we have been advocating a change in the Medicaid system to permit the development of a triage and case management system of care for the chronically mentally ill person. Long-term follow-up care for these patients requires around-the-clock emergency crisis services as well as day and evening, community-based, case management approaches[6-10,12,15-17]. Funding for these new programs can be provided by the savings from prevention of hospitalization. For example, CRSP has saved HSH over $1 million per year through its screening function[22]. Applying the CRSP experience to community psychiatric facilities on Oahu, an additional $2 million per year could be saved if all Medicaid assisted patients received the

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same screening services[22]. This money could then fund the service needed to keep the SDMI individual functioning in the community. The new service providers would be highly motivated to keep the SDMI person out of the hospital if the reimbursement for such services were retrieved; we have prepared a proposal incorporating these ideas[22]. Similar proposals have been implemented successfully in other locations[23].

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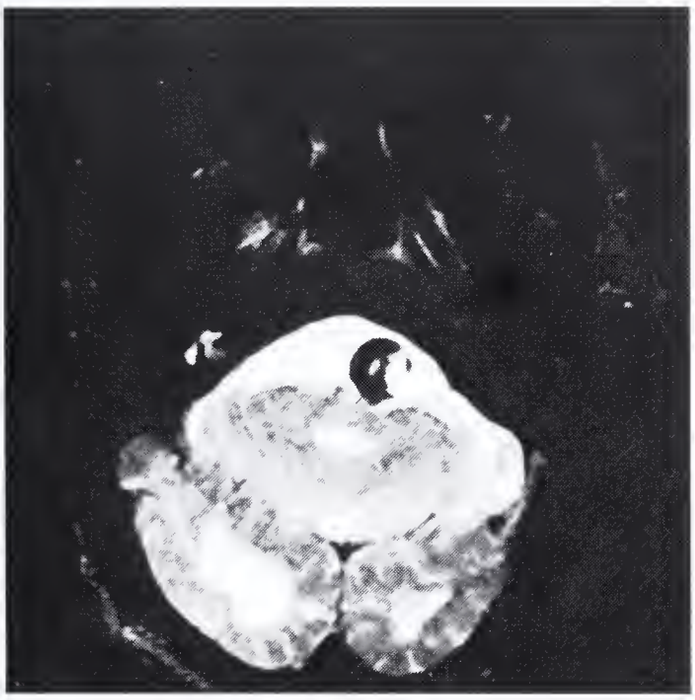
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MRI CASE OF THE MONTH

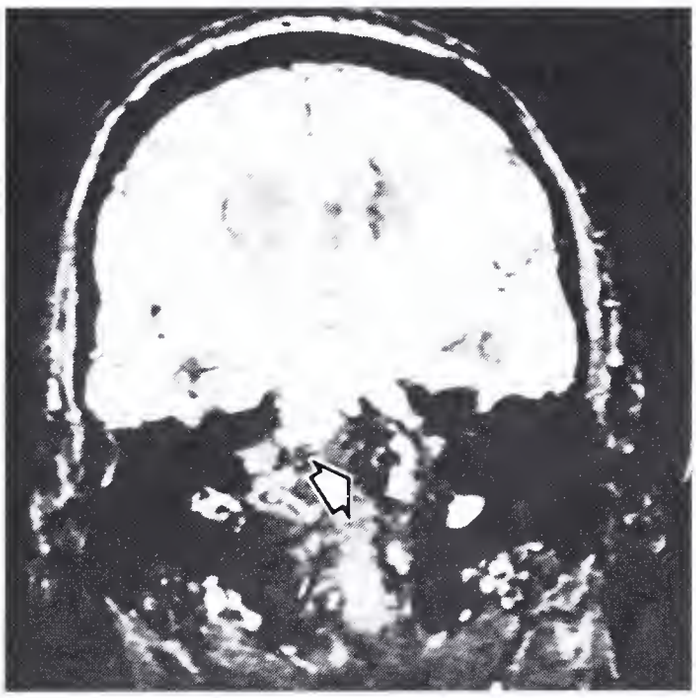
BASILAR ARTERY ANEURYSM

Clinical History: 64 year old male

1



2



These images were produced by MRI Center of the Pacific using their 1.5 Tesla GE Scanner.

Radiologic Diagnosis: T2 weighted transaxial (#1) and GRASS coronal images (#2) demonstrate the large basilar aneurysm indenting and compressing the pons and fourth ventricle with moderate hydrocephalus. Note the low signal rim of hemosiderin on the transaxial view. More recently formed thrombus gives a brighter signal.

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Psychosocial vocational rehabilitation services in Hawaii

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Isabelle Matsumoto, RPN**

As a conceptual model for reviewing the range of psychosocial rehabilitation services available to the seriously disabled mentally ill (SDMI) population in Hawaii, this report utilizes the program spectrum and criteria developed by Vogelmann-Sine and Sine[1] for the Mental Health Division of the State Department of Health (see Appendix A). The 5 types of psychosocial rehabilitation programs to be reviewed include: (1) Vocational programs, (2) pre-vocational programs, (3) day-treatment programs, (4) social clubs and (5) drop-in centers. Some of these programs are provided by the private sector through contractual arrangements and others are provided in the public sector at the local community mental health centers (CMHC).

The data in this report are based on the research study conducted across all CMHC in Hawaii during 1985[1]. To summarize the results, 674 active clients between the ages of 18 and 35 were assessed using the Program Needs Assessment Instrument (see Appendix B). Since 198 clients were involved in some form of employment, the remaining 476 clients were examined for program needs. Of these 476 clients, 401 were assessed as needing some type of psychosocial rehabilitation program; 75 clients were not placeable for various reasons (e.g., missing data or not fitting program criteria). Of the 401 clients with usable data, results indicated that 88 clients required a vocational program, 164 clients a pre-vocational program, 74 clients needed a day-treatment program, 36 a social club, and 34 clients required a drop-in center.

Perhaps the most significant result of this study is that vocational and pre-vocational services should have the highest priority since they constitute 63% of the total services needed[1]. Yet our current programs continue to emphasize social recreational services instead of vocational/pre-vocational programs.

* Chief, Hawaii State Counseling Service

** Kalihi-Palama Center Pre-Vocational Services

Descriptions of Psychosocial Rehabilitation Programs

Vocational Programs

One contractor provides approximately 90% of the vocational services available. Network Enterprises Inc., is responsible for work training, job development and job placement on Oahu. In 1985, Network served 76 clients, placing 61 (80%) in paid employment with a total annual earned income of $507,520. In 1986, Network increased its clients to 99, placing 80 (81%) in paid employment with a total annual earned income of $665,600. Also, this program helped clients to reduce their dependence upon public assistance by over $675,000 for this same 2-year period.

Additionally, only a few CMHC developed vocational programs serving approximately 12 to 15 clients whose total annual earned income is less than $25,000. These programs either use the Transitional Employment Program (TEP) model or refer clients to the Division of Vocational Rehabilitation, while providing follow-up support services.

Pre-Vocational Programs

Several CMHC utilize work-related skills training programs that teach clients specific occupational skills (e.g., janitorial duties, clerical tasks and kitchen/restaurant work). These programs are run in conjunction with the vocational services described above and contain a planned progression toward employment. As demonstrated by Vogelmann-Sine and Sine[1], clients need pre-vocational services more than any other specific service. It should be noted that, while many day programs do offer occupational therapy and similar activities, these programs have not developed ways for their clients to exit from their services via volunteer or competitive employment.

Most CMHC have contracts with sheltered workshop programs. Unfortunately, these workshops tend not to allow exit from the programs as well. There appears to be a preference to place difficult clients in these workshops with little or no follow-up or on-going case management

services. Thus, many of our clients have been left in workshops for years with little functional progress.

Day-Treatment Programs

Each CMHC has some version of a day-treatment program, varying from those described above as focusing on work-related behaviors and skills, to those emphasizing social and recreational activities and to those with a more traditionally psychotherapeutic orientation. Perhaps, the common thread is the overall importance placed upon individual and group skills-building activities.

In the past year, most day-treatment program staffs have had the opportunity to participate in several weeks of training in the use of psychoeducational approaches (e.g., UCLA and Florida Mental Health Institute training programs). With follow-up utilization training, almost all day-treatment programs are now using a variety of psychoeducational modules as the basis of their skills-teaching programs.

It seems, however, that the concept of a day-treatment program being a structured and time-limited (i.e., 12 months or less) service has yet to take hold. Because there are few or no exits available to clients of these programs, many tend to remain in such programs indefinitely. This is especially true of those programs that are primarily oriented toward outings and similar recreational activities.

Social Clubs

As distinct from socially-oriented, day-treatment programs, social clubs are conducted by self-help groups in Hawaii. These clubs typically meet once a week in some community setting (e.g. church halls) and function to establish and maintain social networks among identified groups at risk (e.g. manic-depressives and schizophrenics).

Drop-In Centers

Though not funded by MHD, there is one large drop-in center in Honolulu that serves people who have no other place to go. It provides an estimated 150 free meals per day and overnight shelter to approximately 300 to 320 people per night. It is the Institute for Human Services.

Another relatively small drop-in center, in Hilo, by contract with MHD, provides evening and weekend socialization opportunities to about 30 people per day. This program does not provide overnight shelter.

Both of these programs provide services to a population that generally refuses formal mental health services but whose people are all too often known to the emergency rooms and crisis intervention teams.

Summary and Discussion

While the MHD should feel pleased with the overall quality of its psychosocial rehabilitation programs, there is room for improved quality of services and a need to re-prioritize these services. According to the Vogelmann-Sine and Sine data,[1] approximately 18% of the current SDMI population are in need of pre-vocational programs. Yet, the largest portion of the psychosocial rehabilitation programs budget conservatively estimated at 75 percent, goes to day-treatment programs. These funds need to be re-prioritized for clients capable of higher functioning into vocational and pre-vocational services (63%), as well as for lower functioning clients into social clubs and drop-in centers (19%). Perhaps the Robert Wood Johnson project program standards will be able to address this seeming discrepancy between the types of programs needed by our clients and the currently budgeted services.

Finally, staff training through experimental involvement with exemplary psychosocial rehabilitation programs is needed. Where such opportunities have been afforded our staff, innovation and enthusiasm are evident. All members of the staff need such training in order to help them make the transition from a "day-care" mentality to a vibrant and vision-directed approach to the delivery of psychosocial rehabilitation services for our SDMI clients.

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(Continued)

Appendix A

PROGRAM SPECTRUM AND CRITERIA

Please rate the following statements as each pertains to the client. Circle 1 for YES and 2 for NO.

VOCATIONAL PROGRAM	YES	NO
a. Needs and is motivated for paid community-based work experience such as temporary employment or contract work as a transition to regular full- or part-time.	1	2
b. Needs and is motivated for vocational counseling and job placement services.	1	2
c. Has demonstrated acceptable work attitudes and habits for community-based work.	1	2
d. Can be placed in regular full- or part-time employment within (circle one): 6 months 1; 12 months 2; 18 months 3		

PRE-VOCATIONAL PROGRAM		
a. Needs a daily structured program to develop work habits and attitudes.	1	2
b. Symptoms interfere minimally in daily performance of work activities.	1	2
c. Has mastered living skills	1	2
d. Has reasonable potential for competitive employment within 12 months.	1	2
e. Is independent regarding transportation.	1	2

DAY-TREATMENT PROGRAM		
a. Needs daily structured activities to improve or maintain level of functioning.	1	2
b. Motivated toward improving daily living skills to further independence (money management, regular attendance, communication skills, personal care, stress management, etc.).	1	2
c. Able to benefit from a maximum of 12 months of services and able to be referred to social clubs, volunteer work, sheltered workshop, pre-vocational or vocational training, or other constructive activities.	1	2
d. Can participate in day-treatment activities without grossly disrupting others.	1	2

SOCIAL CLUB		
a. Needs at least weekly social contact to prevent isolation and deterioration.	1	2
b. Expresses primary interest in structured social/recreational activities.	1	2
c. Can take bus or someone is willing to transport person.	1	2
d. Can participate in social club activities without grossly disrupting others.	1	2

DROP-IN CENTER		
a. Needs opportunity for contact with mental health services in an unstructured setting for purposes such as socialization and medication evaluation.	1	2
b. Expresses interest in socialization at a nonstructured level of involvement.	1	2

LEVEL OF FUNCTIONING SCALE

Degree of Problem	General Rating Guides
0 No Problem	Functions as well as most people of same age, sex, and subculture
01-10 Slight (mild)	Functioning falls short of expectation, not seriously disturbed
11-20 Moderate	Functioning occasionally questionable, periodically inadequate
21-30 Moderate	Functioning is marginal or inadequate for age, sex, and culture
31-40 Severe	Functioning marked by obvious failure, external control needed
41-50 Extreme	Extreme problems, behavior out of control, potentially life threatening

Slight (Mild) — Moderate — Moderate Severe — Severe — Extreme

0 10 20 30 40 50

I. Problems of Behavior-Extent to which the person's daily overt behavior is inappropriate and/or unacceptable.	___	___
II. Problems of Personal Distress—Degree to which the person's emotional life is out of control.	___	___
III. Interpersonal Problems—Degree to which the person's relationships with others are incompatible or ineffective.	___	___
IV. Socio-Legal Problems—Inability to maintain behavior within limits of the laws and/or recipients of acts outside limits of laws.	___	___
V. Medical/Physical Problems—Extent to which the person is subject to illness, injury, and and/or disabling physical conditions.	___	___
VI. Problems of Thinking—Inability to use clear and rational thought processes.	___	___
VII. Substance Problems—Degree to which the person is unable to control the use of synthetic or natural substances.	___	___
VIII. Role Performance Problems—Ineffective management of the role most relevant to the person's current life.	___	___
IX. Problems Obtaining Basic Needs—Degree to which the person has problem(s) obtaining basic needs of food, clothing, shelter, and transportation.	___	___

DISABILITY ASSESSMENT

The purpose of this assessment is to determine which individuals belong to the CMI grouping. For each, please circle the number which applies:

1. Severe Disability Resulting from Mental Illness		
a. Has undergone psychiatric treatment more intensive than outpatient care more than once in a lifetime (e.g., emergency services, alternative home care, partial hospitalization or inpatient hospitalization).	1	2
b. Has experienced a single episode of continuous, structured supportive residential care other than hospitalization for a duration of at least two months.	1	2
2. Impaired Role Functioning—On a continuing or intermittent basis for at least two years:		
a. Is unemployed, is employed in a sheltered setting or has markedly limited skills and a poor work history.	1	2
b. Requires public financial assistance for out-of-hospital maintenance and may be unable to procure such assistance without help.	1	2
c. Shows severe inability to establish or maintain a personal social support system.	1	2
d. Requires help in basic living skills.	1	2
e. Exhibits inappropriate social behavior which results in need for intervention by the mental health and/or judicial system.	1	2
3. Requires long term full-time, skilled or semiskilled care in a medical or nursing facility.	1	2
4. Primary disability results from:		
a. Mental retardation	1	2
b. Alcoholism	1	2
c. Drug abuse	1	2

Note: An individual is considered Chronically Mentally Ill acccording to NIMH if the following criteria are met: Yes to either Ia or Ib, Yes to at least two of the 2a thru 2e items, No to 3 and No to 4a thru 4c.

Please turn in survey to Rehabilitation Service Plan Committee rep.

Appendix B

This form should be completed for each adult client between 18 and 35 years old (born between) July 1, 1950 and July 1, 1967) active in your unit on July 1, 1985.

Staff Names:

1) _____

2) _____

Date_____/_____/_____
(M / D / Y)

PROGRAM NEEDS ASSESSMENT

Name _____
(Laste) (First) (M.I.)

Client (CR) Number _____ _____ _____ _____ _____ _____

Center (circle one)

01 Central Oahu
02 Diamond Head
03 Kalihi Palama
04 Leeward Oahu (Waipahu/Ewa)
05 Waianae
06 Windward Oahu
07 Hawaii
08 Kauai
09 Maui

Birthdate _____/_____/_____ (M/D/Y)

Sex (circle one) 1 Female 2 Male

Marital Status (circle one)

1 Never Married
2 Married
3 Separated
4 Divorced
5 Widowed
6 Unknown

Ethnic Group (circle only one)

01 Alaskan Native
02 American Indian
03 Black
04 Cambodian
05 Caucasian
06 Chinese
07 Cuban
08 Fijian
09 Filipino
10 Hawaiian
11 Japanese
12 Korean
13 Laotian
14 Mexican
15 Micronesian
16 Mixed
17 Mixed
17 Okinawan
18 Part Hawaiian
19 Portuguese
20 Puerto Rican
21 Samoan
22 Tongan
23 Vietnamese
24 Other Asian
25 Other Hispanic
26 Other Pac Isle
27 Other, Specify

English adequate to benefit from a program: (circle one)

1 Yes 2 No

Type of Residence (circle only one)

01 House (Single/ Family Dwelling)
02 Apartment/Condominium
03 Hotel
04 Group Home
05 Nursing Home
06 Boarding Home
07 Care Home
08* Rehab Oriented Facility
09 Foster Family
10 Emergency Shelter
11 Rooming House
12 Other _____
13 None

*For example, Po'ailani, The House, Project Peer

Residing With (check all that apply)

____Alone
____Spouse
____Dependent Children
____Adult Children
____Single Parent
____Parents
____Stepparent(s)
____Siblings
____Other Relatives
____Friends
____Other Adults
____Other_____

Structure of Daily Activities (check all that apply)

____Full-time Employment
____Part-time Employment
____Sheltered Employment
____Full-time Vocational Training
____Part-time Vocational Training
____Volunteer Work
____Homemaker
____Student
____Center Programs specify_____

____Other (specify)

____Doing Nothing

Employment

Longest time continuously employed ____ ____ ____ months

Year of last employment (None = 0000) ____ ____ ____ ____

Education

Highest Grade Completed (if beyond high school, indicate total years of education) ____ ____ years

Diagnosis:

	Axis I	Axis II	Axis IV	Axis V
Primary	____•____	____•____	_____	_____
Secondary	____•____	____•____		
Tertiary	____•____			

Axis III (text) _____

Is Asix II Principal Diagnosis? (circle one) 1 Yes 2 No

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Summary.
Consult the package literature for prescribing information.

Indication: Lower respiratory infections, including pneumonia, caused by *Streptococcus pneumoniae*, *Haemophilus influenzae*, and *Streptococcus pyogenes* (group A β-hemolytic streptococci)
Contraindication: Known allergy to cephalosporins
Warnings: CECLOR SHOULD BE ADMINISTERED CAUTIOUSLY TO PENICILLIN-SENSITIVE PATIENTS. PENICILLINS AND CEPHALOSPORINS SHOW PARTIAL CROSS-ALLERGENICITY. POSSIBLE REACTIONS INCLUDE ANAPHYLAXIS.

Administer cautiously to allergic patients.

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics. It must be considered in differential diagnosis of antibiotic-associated diarrhea. Colon flora is altered by broad-spectrum antibiotic treatment, possibly resulting in antibiotic-associated colitis.

Precautions:
- Discontinue Ceclor in the event of allergic reactions to it.
- Prolonged use may result in overgrowth of nonsusceptible organisms.
- Positive direct Coombs' tests have been reported during treatment with cephalosporins.
- Ceclor should be administered with caution in the presence of markedly impaired renal function. Although dosage adjustments in moderate to severe renal impairment are usually not required, careful clinical observation and laboratory studies should be made.
- Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.
- Safety and effectiveness have not been determined in pregnancy, lactation, and infants less than one month old. Ceclor penetrates mother's milk. Exercise caution in prescribing for these patients.

Adverse Reactions: (percentage of patients)

Therapy-related adverse reactions are uncommon. Those reported include:
- Gastrointestinal (mostly diarrhea) 2.5%
- Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment.
- Hypersensitivity reactions (including morbilliform eruptions, pruritus, urticaria, and serum-sickness-like reactions that have included erythema multiforme (rarely, Stevens-Johnson syndrome) and toxic epidermal necrolysis or the above skin manifestations accompanied by arthritis/arthralgia, and frequently, fever). 1.5%, usually subside within a few days after cessation of therapy. Serum-sickness-like reactions have been reported more frequently in children than in adults and have usually occurred during or following a second course of therapy with Ceclor. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.
- Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.
- As with some penicillins and some other cephalosporins, transient hepatitis and cholestatic jaundice have been reported rarely.
- Rarely, reversible hyperactivity, nervousness, insomnia, confusion, hypertonia, dizziness, and somnolence have been reported.
- Other: eosinophilia, 2%, genital pruritus or vaginitis, less than 1%, and, rarely, thrombocytopenia.

Abnormalities in laboratory results of uncertain etiology
- Slight elevations in hepatic enzymes.
- Transient fluctuations in leukocyte count (especially in infants and children).
- Abnormal urinalysis, elevations in BUN or serum creatinine.
- Positive direct Coombs' test.
- False-positive tests for urinary glucose with Benedict's or Fehling's solution and Clinitest® tablets but not with Tes-Tape® (glucose enzymatic test strip, Lilly). [061088L]

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HMA Committee Reports

Meeting of the HMA Chronic Illness and Aging Committee

Walter Quisenberry, MD
Chairman

Present were: Dr. Quisenberry, Mr. Halfpenny, Administrator of Maunalani Care Home; Cliff Moran, MD from Maui; Herbert Lummis, MD; M. Lou Hefley, MD; Evangeline Dunbar; Kleona Rigney, MD of the DOH; Kalani Brady, MD; Eugene Guerrero, MD and Frederick Reppun, MD. Linda Katagiri of HMSA was the invited guest and presenter. The meeting was held at noon on January 11, 1989.

The subject of the meeting was the "new" Congressional law known as the *Medicare Catastrophic Care Act of 1988.*

What the committee members heard could be capsulized in two words: it is a "Catastrophic Act"!

Part A Benefits come into play as of the first of January 1989 and pertain to Part A of Medicare; Part B coverage starts in 1990, Drug Coverage in 1991.

What we heard was barely enlightening and mostly discouraging. For acute hospitalized patients in 1989, there will be a single annual deductible amount of $560, no limits on the number of days of hospitalization (EXCEPT for the key words: *For approved care;* we physicians are acutely aware of governmental *DIS-approval* of care!). Patient co-insurance amounts are eliminated under the new law and the concept of "per spell of illness" likewise.

What was a major and astonishing surprise to us was Katagiri's statement that the payment by the patient of just one dollar ($1.00) will satisfy the deductible require-

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Description: Yohimbine is a 3a-15a-20B-17a-hydroxy Yohimbine-16a-carboxylic acid methyl ester. The alkaloid is found in Rubaceae and related trees. Also in Rauwolfia Serpentina (L) Benth. Yohimbine is an indolalkylamine alkaloid with chemical similarity to reserpine. It is a crystalline powder, odorless. Each compressed tablet contains (1/12 gr.) 5.4 mg of Yohimbine Hydrochloride.

Action: Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalmic centers and release of posterior pituitary hormone.

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it; however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

Indications: Yocon® is indicated as a sympathicolytic and mydriatic. It may have activity as an aphrodisiac.

Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.[1,2] Also dizziness, headache, skin flushing reported when used orally.[1,3]

Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.[1,3,4] 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to ½ tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.[3]

How Supplied: Oral tablets of Yocon® 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.

References:

1. A. Morales et al., New England Journal of Medicine: 1221. November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
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ment. Care can proceed. What about collecting the remaining $559? There is no Congressional answer to that.

Patients in SNF — Skilled Nursing Facilities — may — emphasis MAY— may stay there for 150 days a calendar year, with co-insurance only for each of the first 8 days at $25.50 per day (to be increased in subsequent years), and, it won't be necessary to have been in an acute care facility previously. Here again, we know all too well that approval for such stays has reduced the national average to around 21 days, as we remember hearing in the past.

Nothing was said about stays in Nursing homes, or other lower levels of care.

Patients in Hospice Care will no longer be limited to a certain number of days, so long as they are certified as "terminally ill" initially, at 30 days, 90 days and 210 days. This certification must be approved, not at the local level, but by Blue Cross of California (why not the more distant and more frigid "regional office" in Antarctica?/Ed)

As for Home Health Care, it is limited to just one — repeat ONE — one visit per case, said Katagiri.

HMSA is the local implementer of the new law, but received no instructions until December 23, 1988, just 3 working days before the law went into effect.

Oh well, the Government giveth and the Government taketh away, we say.

J.I. Frederick Reppun, MD
for the chairman



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Celebrating 130 Years of Healing

Hawaii's residential alternative for the seriously mentally disabled person

Joanne Lundstrom, MSW*
Aric Arakaki**

The Public Citizen Health Research Group survey sought to answer the following question: "If I had a seriously mentally ill member of my family, in which states would the person be most likely to receive good care?" Our task in presenting this paper is to ask a similar question: "Would my long-term, mentally ill relative have an appropriate community residential placement in Hawaii?"

The Housing Market

The availability and development of low- and moderate-income housing is a major economic and political issue in our State. Since the 1960s, the demand for moderately priced housing has been far greater than the supply. The construction industry has aimed its development and sales strategy to a world and national market rather than to the local market. The high cost of land, construction materials and labor, coupled with inflation and rising interest rates, all contribute to the high cost of housing in Hawaii. Past studies have shown that 80% of Hawaii's civilian population cannot afford to purchase a home at the going market rate. This has resulted in more demands being placed on government to address the need for affordable housing.

Hawaii Housing Authority's latest data indicate that Honolulu was ranked third-highest nationwide among 329 metropolitan areas in the country, on the average value of a single-family house ($163,400 in 1984). The price of housing in Hawaii averages about 173% higher than it does on the Mainland.

Another effect of high-cost housing is that more households rent, rather than own, homes. Among Honolulu households, 51% rent homes, as opposed to 35% nationwide. The Authority's rent survey of April 1985 indicated that the average rental cost on Oahu was $770 per month. Data from the Federal Home Loan Bank indicated the vacancy rate for apartments in 1983 was 1.5%, the lowest it had been in 14 years.

While the housing costs on the Neighbor Islands are somewhat lower than on Oahu, the housing supply is also lower. This diminishes the affordability and availability of low- and moderate-income housing for Neighbor Island residents.

* Executive Director, The House, Inc.
** Former Housing Specialist, Mental Health Division, State Department of Health

These are the general housing market conditions that the mentally ill and their families have to face daily in their struggle to live in the community, a struggle more difficult than for the rest of us.

Housing and the Mentally Ill

It is estimated that there are over 10,000 seriously disabled mentally ill (SDMI) individuals in the State. Of these, many live alone or with their families and receive few or no mental health services. Approximately 1,100 live in care and boarding homes. Less than 250 are patients in an acute care or long-term care institution at any one time. As of January 1987, only 298 individuals were participating in community-based residential programs.

Most of the long-term mentally ill are poor. Many live in substandard housing and are unable, because of their disability, to gain access to low-income housing resources. Because of the stigma associated with mental illness, many are discriminated against when they attempt to find a place to live. They have accepted living on, and been welcomed only by, the streets. Maybe one-third of Hawaii's homeless, estimated at 1,600, are mentally ill.

The Response

Hawaii does have a spectrum of residential living opportunities for persons recovering from a serious mental illness. It is important to note we are a state consisting of several major islands. As part of a community support plan, each island group has developed a housing plan for the mentally ill that is reflective of their needs.

The impetus for making such facilities available began in the early 1970s when the Mental Health Association provided the initiative, with funding coming largely from the State Department of Social Services and Housing as well as from the private sector. With the advent of the Federal Community Support initiative in 1982, and the concurrent mental health community initiative in pursuing a State Mental Health Systems Act, a proliferation of demonstration residential programs occurred, supported by State and federal funds. Table 1 illustrates the growth of residential services over the last 10 years.

What Exists

The community support initiative also resulted in the development of a State Plan in 1983 titled: "Community Residential Facilities Plan." At that time, 150 residential beds were identified. The plan indicated a need for 993

(Continued)

additional beds in a variety of residential treatment settings. The actual number of beds as of October 1988 is shown in Table 2.

Current Issues

1. Gaps in the System. Like most states, Hawaii has developed services by increments for the long-term mentally ill, resulting in a fairly comprehensive yet fragmented and uncoordinated residential system. The gaps in the residential options are few but serious: No respite service, no intensive community-based treatment facility, no "life-long" supportive living/case-management facilities. And, as in many other states, the provision for beds is inadequate to meet the demand.

Specifically identified, bed expansion need areas are: (1) Crisis beds; (2) intensive treatment and "transitional" beds leading directly to long-term housing placement, with supportive on- and off-site services; (3) beds for special needs such as for clients with concurrent medical conditions; and (4), perhaps most importantly, although not residential per se, an assessment and placement center where patients can be connected to the most appropriate residential services.

Presenting this picture of the service does not answer the introductory question, however. The answer, simply stated, is that one's chances of finding an appropriate housing resource are fairly good, as the array is fairly comprehensive, but, one may have trouble in gaining access to and navigating within, the system.

Access to the residential system is largely dependent upon a family member having a close relationship with a mental health specialist knowledgeable about residential resources. Someone, either the family member or guardian, or the specialist, must ensure that monies are available for placement costs and continuing medical coverage. Assistance with these kinds of financial details is not the purview of any one consultant and one may have to do considerable shopping around in both instances (shelter and financial resources) before an appropriate placement is realized. In fact, it may be easier to have a relative hospitalized and referred to placement from the hospital than to negotiate the system from outside. Hardly a preventive approach, but, unfortunately, a characteristic reality of the past.

Residential resources have been skewed historically in Hawaii toward boarding and care homes, placements that were not funded by the DOH. As the DOH has taken on increasing responsibility in the funding for less restrictive residential rehabilitation programs, the emphasis has been placed on what was perceived as the least costly alternative, namely independent living. There has been no substantive increase in funding for supervised group living the past several years, perhaps resulting in a bypass system wherein the majority of patients are more likely to go directly from inpatient to independent living arrangements. This generates some uncertainty within case-management services, since this is hardly a rehabilitative or supportive residential alternative.

There is also no consistency in the way assessment, treatment planning, and case documentation for residential services is determined. Standards pertaining to the delivery of mental health services, however, do exist and all programs are required to comply with them, but these standards do not address uniformity in the above areas. This lack of uniformity also contributes to a lack of coordination existing between the private and public sectors.

Although housing is an important need, other services such as pre-vocational, vocational, day and socialization programs have not developed at the same rate as the residential component. Such programs that currently exist are either overcrowded or are not linked with residential programs in a systematic way.

As a byproduct of the lack of connections between services, there is no systematic tracking, nor assessment of the status of patients as they move in and out of programs. A revolving door syndrome may be the result, the impact of which could be a residential service system that is not long-term and therapeutic.

2. Community Acceptance. The siting of community-based residential facilities for the SDMI is also an issue that needs the attention of decision-makers. Neighborhoods are reluctant to have such housing in their midst and unfurl the "not in my back yard" banners. Many times, the response from the planners is to try somewhere else. Neighborhood mediation programs have been successfully used in the past. Zoning codes limiting the number of unrelated individuals who may occupy a housing unit have changed so as to allow an increase from five to eight unrelated individuals living in one house.

The State has no comprehensive siting plan for all the various types of residential treatment facilities. Mental health programs should not have to be stifled because of the stigma and myths associated with mental illness. The absence of a siting plan also pits the different treatment modalities and services against one another in competing for available properties. The developmentally disabled have been successful in establishing housing throughout the community with the assistance of both the City and State housing agencies. This leaves mental health at a disadvantage when housing is similarly proposed for a neighborhood. The argument would then be raised by the community now being innundated with such housing. If government can condemn properties and evict hundreds of families for a roadway to be built then, in all its wisdom, it should be able to allow for the equitable siting of facilities that likewise serve people.

3. Financing. The funding for both capital improvements and community-based services poses another challenge for the establishment of housing for the mentally ill. Historically the trend was to build massive structures for institutions. Likewise, the delivery of services was concentrated in these institutions. The actual funding to build and/or rennovate community-based facilities was not initiated until the beginning of this decade.

To-date, 2 group-living projects have been funded through the joint efforts of local and federal government and private collaboration. Utilizing the HUD Sec. 8, 202 program, both "The House" on Oahu and Maui's

(Continued on page 88)

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"Lokahi Pacific" were able to develop a total of 30 beds. Most agencies providing residential resources must fend for themselves in the rental market and then rely on client shelter fees to cover the cost of the rent. While such developments like the HUD projects are ideal, it is also practical to facilitate, through joint planning and legislation, access to existing and planned affordable units.

The DOH, through legislative funding, will be meeting most of the service-related costs of residential programs.

A Medicaid waiver is presently being considered to allow for coverage of case-management services, partial hospitalization, day treatment, and treatment-related residential services. As a start, the waiver would allow for a more secure system of funding. In the long run, the proven cost savings should justify an amendment to the State's medicaid plan, thus assuring the continuation and expansion of community-based services.

4. Families. For families who live with and care for persons with long-term mental illnesses, the following needs have yet to be met:

(a) Improved delivery of comprehensive services including outreach, training, and case management for the mentally ill person in the home;

(b) a respite facility to allow for time-out and needed breaks;

(c) sufficiently long-term, supportive, back-up housing facilities to assure a safe place for the mentally disabled one when he/she can no longer live at home; and

(d) an offer of organizational and programmatic assistance to self-help family groups.

Conclusion

Hawaii does have a spectrum of residential options for the long-term mentally ill, some of which are exemplary, many of which are as adequate as in any other state, and all of which need to be better integrated within a more natural mental health system.

To return to the introductory question: "Would my seriously mentally ill relative have an appropriate residential placement in Hawaii?" The answer is yes: It is likely that there is an appropriate option, but unlikely that there will be space available. We have the quality; we need the leadership and direction to assure quantity.

We do know our problems and we are eager to work on the solutions. Our accomplishments are many and recent developments in the State show promise. The larger solution lies in the willingness and the ability of our legislators, administrators, service providers, unions, advocate groups and organized members of the general public to negotiate and bring about progressive change.

TABLE 1

GROWTH OF RESIDENTIAL FACILITIES
(in number of beds)
A 10-Year Comparison

1977	1983	1987
28	150	298

TABLE 2

COUNTY: Oahu

Supervision	Type	# Beds	Provider
24-hr On-site	-crisis	4	VIRS
	-long-term	25	The House, Hoopaepae
	-transitional	34	The House, Po'ailani, Kahumana Community.
	-dual diagnosis	5	Po'ailani
8 to 12-hr On-site	-supportive living units	22	The House Duplex Project Peer
Off-site supervised	-assisted independent living (various levels)	135	Po'ailani, The House PAL, Hawaii State Hospital, Windward Group Homes Central Oahu Group Homes
	Subtotal	225	
COUNTY: Hawaii			
24-Hr On-site	-transitional	4	Hilo Transitional
Off-site	-cooperative	40	Hilo Transitional, Kona Krafts
	Subtotal	44	
COUNTY: Maui			
24-Hr On-site	-host family	9	Lokahi Pacific
8 to 12-Hr On-site	-group homes	20	Lokahi Pacific
	Subtotal	29	
	Total	298	

Outpatient services to the seriously disabled mentally ill in Hawaii

Tom Leland, MD*
George Fujioka, MSW**

The mental health system for the State of Hawaii includes 8 Community Mental Health Centers (CMHC), each a State-funded mental health clinic serving a special geographic area on Oahu, and the Hawaii State Hospital (HSH), operated by the Mental Health Division (MHD), State Department of Health (DOH). Hawaii is one of the states that allocates more funds into community-based services than it does to the hospital. Approximately 64% of the service budget is spent for outpatient services and 36% for the HSH.

Overview of Service System

The mental health system includes providers of specific elements of services under contract with MHD, 8 general hospitals with psychiatric units and one private psychiatric hospital providing short-term inpatient care for persons undergoing an acute episode of mental illness. Also, there are 6 consumer organizations, including 4 with affiliation to the National Alliance for the Mentally Ill, 2 advocacy agencies and many psychiatrists, psychologists and social workers in private practice who accept referrals of seriously disabled mentally ill (SDMI) adults.

The provision of a wide range of services, often needed in tandem with mental health services provided by the MHD, is the responsibility of the Department of Social Services and Housing (DSSH). These include financial assistance and food stamps (Public Welfare Division), vocational rehabilitation services (Division of Vocational Rehabilitation) and low-income housing. Low-income housing and housing for the elderly are provided by the Hawaii Housing Authority, which is administratively attached to DSSH. Recreational support is provided by each of the four counties of Hawaii, Maui, Kauai and the City & County of Honolulu. Social Security and Veterans support services are provided by the respective federal agencies.

* Staff psychiatrist, Kalihi-Palama Community Mental Health Center

** Program Support Services, Mental Health Division Staff, State Department of Health

Community Mental Health Centers

As mentioned earlier, the MHD has 8 mental health service areas with a CMHC in each of those areas. Additionally, there is a State-funded mental health clinic serving the Waianae area. Most mental health programs are operated by the State as there are no city or county mental health programs. These centers/clinics are:

Island of Oahu:	Neighbor Islands:
Diamond Head	Hawaii
Kalihi-Palama	Maui
Leeward Oahu	Kauai
Central Oahu	
Windward Oahu	
Waianae	

Outpatient Services

Each Center provides a full range of psychiatric outpatient services. These include, but are not limited to, prescreening, screening, intake, diagnostic, varied treatment modalities, referral and follow-up. Outreach work is directed toward those individuals who cannot or will not come to the Center. Each client is assigned a primary therapist/case manager who has the responsibility to see that the client receives all of the needed services, including those provided by other personnel within the Center and by other health and human services agencies in the community.

The Centers have not experienced much difficulty with language barriers as the multilingual competence of clinic staff meets the most frequent needs. Some Centers have hired staff with specific multilingual capability. Also, the centers have established linkage with community resources to provide the needed interpreters.

Some Centers have provided evening clinics; all Centers provide for clients to be seen by prior arrangement during non-regular working hours.

Follow-up services are provided to ensure continuity of care. Some Centers have specific follow-up units to implement this important task; other Centers have the staff of their outpatient clinics, or special teams, to provide this service.

Consultation and education services are directed at providers of human services, as well as to the public in

(Continued)

the respective service areas. Case and program consultations are provided to these service providers on how to service the mentally ill more effectively. Education is provided to the public in order to increase its awareness of available mental health services, the needs of the mentally ill and the important role the general public can play in having an impact on the mental health system.

Outpatient Services Related Problems

Definition of SDMI

For the initial 1982 Community Support grant application, we used the NIMH definition and did a hand-tallied count of 2,039 active, adult, chronically or seriously disabled mentally ill cases for the MHD. In 1986, the MHD utilized the same NIMH definition in a new program data system that identified 1,146 cases.

There were two obvious reasons for the decrease in these numbers: (a) This is still a relatively new data system that affects the accuracy of the outcome, and (b) the MHD now contracts out more extensively for SDMI programs than in 1980. None of the private contracted-out program data is presently included in this new data system.

The Office of Community Support was determined to "track" the SDMI. It did a study 18 months after the new data system went into effect. The study's findings indicated 2 possible factors for this decrease in client numbers: (1) Due to the methodological procedures in completing the assessment/evaluation/diagnostic form, only 46% of the clients who should have been counted as SDMI were, in fact, included. A policy change is needed in order to rectify this situation; (2) the requirement in the definition of SDMI of having psychiatric treatment more intensive than outpatient care, or structured continuous residential care for at least 2 months, may be too stringent for the young adult patient. The data from this study indicate this to be so. However, we are not comfortable with this finding until a longer assessment period is completed.

Medication Prescribing Standards

Several years ago, in response to the problem with Tardive Dyskinesia, the MHD attempted to set a prescribing standard of periodic Abnormal Involuntary Movement Scale exams and low-dosage strategy among its psychiatrists (excluding those in the private sector). We encountered more resistance to "ordering" standards than expected, and lacked the manpower to conduct adequate educational traveling peer reviews of the various community clinics. There was such fierce "territoriality" and demand for autonomy that no such written policy or standard could be established as a consequence. However, physicians were increasingly educated to the concept. In 1989 mandatory examinations are required.

Another problem concerns the new polypharmacy and lack of acceptance or willingness to prescribe in some of the clinics. For example, during a rather prolonged inpatient stay, it was determined that a patient required Tegretol therapy. However, the CMHC psychiatrist refused to prescribe it out of fear of a resultant blood dycrasia; the patient's illness promptly relapsed. It is not uncommon today to have patients on anti-manic, anti-psychotic and anti-convulsive medications, yet prescriptions are changed when patients migrate into new catchment areas.

Case Management Linkage

The private-sector professionals generally do not seem enthusiastic about working with the severely and chronically mentally ill. It is disturbing that so many of the new professional clinicians, very early in their careers, choose not to work with this fascinating target population. All too often, the private clinician is undertrained (as well as undermotivated) in case management.

Can and should the public-sector professionals extend their case management services to patients in the private sector? At one of the CMHC, case management services for clients by private providers can be obtained only if specific agreements are made. The private therapist asking to provide case management services for the client at public expense (1) must meet in person with the CMHC staff; (2) the client must be present for at least part of the treatment planning session(s); and (3) there must be active and on-going communication between the private therapist and the public case manager. Professional case managers in a variety of disciplines have standards that private providers might find burdensome.

The corrections department: The forgotten branch of the mental health system

Kim Marie Thorburn, MD*

The Hawaii Department of Corrections (DOC), like other corrections systems throughout the nation, struggles with problems arising from incarcerating mentally ill prisoners and detainees. The incarcerated population of mentally ill persons burgeoned as mental hospital inmates were "deinstitutionalized" during the 1960s and 1970s. However, correctional facilities, particularly jails, became alternative institutions for mentally ill persons when communities were unprepared to provide required services. Correctional facilities were equally unprepared to manage seriously disabled mentally ill (SDMI) inmates, but the facilities provided a dumping ground for a community's undesirables. Out of sight, out of mind!

During the decade of the 1960s, the health of the inmates of correctional facilities received mounting scrutiny. The American Medical Association studied jail medical services and developed standards and a program of accreditation. Jail and prison medical services also became a focus of prisoners' rights legal actions. This medical and legal attention to health services for incarcerated persons resulted in notable improvements.

However, similar attention to mental health services for incarcerated inmates was woefully lacking. The original American Medical Association Standards for Health Services in Jails contained no specific standards on mental health services. Its successor, the National Commission on Correctional Health Services, set standards that have added a requirement for suicide prevention plans. There are no landmark legal cases pertaining solely to mental health services for prisoners.

* Health care director, Hawaii Department of Corrections; associate professor of medicine, University of Hawaii John A. Burns School of Medicine

The Consent Decree

In 1985, the American Civil Liberties Union (ACLU) represented inmates in litigation against conditions of incarceration at the Oahu Community Correctional Center (OCCC) and the Women's Community Correctional Center (WCCC). In the fall of that year, the State and the ACLU agreed on a Consent Decree. Three plans for improvement in inmate conditions were drawn up in the areas of correctional management, environmental health and sanitation, and medical and mental health services. Progress toward compliance with the plans is being monitored biannually by panels of two experts in each field. The Consent Decree required full compliance in 3 years.

The medical and mental health services plan of the Consent Decree reflects the general pattern of case law on prison conditions in its approach to mental health services. It is very specific regarding medical services at the OCCC and the WCCC by delineating specific requirements for procedures, services and health professional hours. The monitoring panel consists of 2 non-psychiatrist medical doctors with expertise in correctional medicine. In contrast, the only initial mental health service requirements in the Consent Decree involved professional hours. The State was mandated to write its own mental health plan.

The Mental Health Plan

In 1987, the State's mental health plan for inmate services at the OCCC and the WCCC was accepted by the court, thereby incorporating it into the Consent Decree. As part of the Consent Decree, the mental health plan focuses on the OCCC and the WCCC. But by defining required mental health services, facilities and professional staffing, it is a blueprint for care at all DOC facilities.

The mental health plan reaffirmed a longstanding relationship with the Department of Health (DOH) as the provider of mental health services to the State's incarcerated inmates. The people of the corrections mental health staff come from the Courts and Corrections

(Continued)

Branch of the DOH Mental Health Division. It is a team comprised of psychiatrists, psychologists, psychiatric social workers, clerical staff and a psychometrist. The DOC provides support professional and paraprofessional staff.

Services and Facilities

Mentally ill inmates are a challenge to correctional management. Unusual behavior, whether delusional or "acting out," is not tolerated in correctional facilities. Such behavior may provoke a punitive reaction by staff or a predatory response by other inmates. Segregation of some mentally ill inmates is, therefore, necessary.

The DOC staff attempts to identify mentally ill inmates as they enter the facilities. A screening questionnaire is administered by intake personnel. The new intake information is reviewed daily by the mental health staff, which uses the results to triage inmates for further evaluation, segregation or treatment (if needed). The intake questionnaire responses indicate that approximately 35% of male inmates coming into Oahu facilities currently have or have had a history of mental disorders. This is a somewhat higher figure than the national average of 20% to 25% of jail admittees.

The OCCC is designated as the DOC facility with intensive services for mentally ill male inmates. There are two housing units at the facility that are reserved for mentally ill inmates who need to be segregated from the general (prison) population. Admission, discharge and bed assignment to the housing units are controlled by the mental health staff.

Facilities for women pose greater problems. The WCCC is overcrowded and always pushing against its maximum population cap. The facility consists mostly of dormitories; segregation of mentally sick women must sometimes take place in the disciplinary segregation unit, referred to in prison jargon as "the hole."

Seriously disabled mentally ill prisoners at both OCCC and WCCC are cared for by psychiatrists who manage medications and direct the assigned psychiatric social workers. As in the outside community, the goal of therapy is to return the inmate patients into the mainstream of outside life as much as possible. If these patients become stable enough, they are returned to the general outside population, including transfer to other facilities with less intensive services, and encouraged to get jobs and enter other programs.

The DOC mental health services include simple ambulatory mental health care but this is in stark contrast to the situation before the litigation. At the OCCC, SDMI pretrial detainees were stuffed into a dingy corridor of the old Oahu Prison (OP) cellblock. Sentenced men with mental disorders were housed in a unit where they were cared for by trusties — strong-arm convicts who ran the unit according to prisoner standards. Suicide prevention consisted of removing all furniture, clothing and other articles from a cell in "the hole." Access to programs was denied and treatment was minimal.

The Hospital

When an inmate's mental condition deteriorates and hospitalization is required, the Hawaii State Hospital (HSH) has been the traditional resource facility. Presentenced detainees are admitted by court order, as is the case with involuntary admissions from the outside community. There is a statutory transfer procedure for sentenced inmates in which the director of corrections signs over custody to the Director of Health.

Corrections cases are admitted to the forensic unit of the HSH, which also houses individuals who are acquitted of crimes for reasons of insanity, or who are undergoing mental examinations for the ability to stand trial, or for sanity pleas, arrested misdemeanant offenders deemed too sick to stand trial, and other categories of mentally ill offenders diverted away from the DOC. The forensic unit is often "over census" and beds are frequently not available for DOC inmates who have deteriorated and require hospitalization. Outside community beds are also difficult of access.

The DOC plans to build inpatient mental health care facilities because of the problems associated with attempting to hospitalize inmates who are acutely mentally ill. New prison facilities are planned to replace the WCCC and the old OP cellblock at the OCCC. Acute-care hospital wards (4 beds at the WCCC and 20 beds at the OCCC) for mentally ill inmates will be built in the new facilities.

The Diversion Program

The State has an innovative program that diverts mentally ill misdemeanant offenders away from jail. Every morning, individuals who are arrested for petty misdemeanors are screened by Courts and Corrections Branch staff at the District Court cellblock in Honolulu. Seriously mentally ill offenders are transferred out of the court system and are referred to the HSH. Such offenders, if not transferred, would have received sentences so short that mental health professionals working in the DOC would have had little opportunity to stabilize them before release. Their diversion to the HSH permits more adequate treatment.

The Consent Decree provides stimulus for better care for mentally ill inmates of the DOC than existed before the lawsuit. A larger treatment staff is now available. Facilities have improved. But problems still remain. Aftercare of mentally ill inmates released to the outside community is often lacking. Parole release may be delayed while attempts are made to coordinate community services for a mentally ill parolee. The Neighbor Island jails still lack professional mental health staff. During the several years before the new acute mental wards are completd at the WCCC and the OCCC, there will not be enough beds for hospitalization purposes. Correctional staff should have more training and be better compensated to enable them to give support care to mentally ill inmates.

Jails and prisons are not therapeutic environments. I look forward to the time when Hawaii, and the rest of our nation, provides sufficient community services to keep most mentally ill people out of jails and prisons. Meanwhile, the DOC is an important component of the mental health system of care in the State of Hawaii.

The first shall be last; but can the last be first?

Denis Mee-Lee, MD*

The State of Hawaii has long prided itself on being a leader in the nation in its provision of mental health and other social and health services. In 1986, and again in 1988, the Public Citizen Health Research Group, a Ralph Nader affiliated entity, ranked Hawaii 51st among the states and the District of Columbia in its care of the seriously mentally ill. Initial reaction within the mental health community in Hawaii was primarily one of perplexity and disbelief. Although it quickly realized that this report was based on the cursory opinion of one principal individual, drawing upon very little data and solid comparable information, the impact of these rankings has been to focus much more attention upon what really is happening to the seriously disabled mentally ill (SDMI) in this state. Hopefully, the eventual results will conform to the original intent of the report's authors, Drs. Fuller Torrey and Sidney Wolfe, namely a new, enchanced and broadbased commitment to improving services to this special and often forgotten population in need.

The SDMI comprise approximately 1% of the population of Hawaii; this is about 10,000 people and is less than 10% of the estimated total psychiatrically ill population at any one time. The SDMI have severe, persistent mental illness, usually schizophrenia or other psychotic disorders, which interfere significantly with their ability to function independently and productively. Today, only a small proportion, fewer than 1 in 20 of these individuals, are hospitalized, usually for relatively brief periods of up to a few weeks or months. Most live in various community arrangements while receiving varying levels of treatment and support.

Historically, society's response to the severely mentally ill has been cyclical, ranging from repression and denigration, to intervening periods of humane acceptance and support. Rejection and imprisonment were displaced as solutions in the late 18th century, succeeded by many decades of so-called moral treatment. Large prisons and institutions housing these ill people gave way to small asylums with nurturing environments. Throughout the United States, Dorothea Dix championed the establishment of humane facilities in peaceful, pleasant surroundings away from urban pressures.

However, it was the industrial explosion and subsequent rapid population growth at the beginning of this century that forced the eventual crowding into, and decline of, the state hospitals. The SDMI patients again became relegated to the out-of-sight, backward, often forgotten and frequently neglected.

This century's version of the "dark ages" type of treatment of the mentally disturbed began to recede in the 1950s as the result of growing public and professional concern with the evils of institutionalization. The 1961 congressionally supported report, "Action for Mental Health," urged that community treatment of the severely mentally ill was preferable to state hospitalization. President John F. Kennedy embraced this belief, which became national policy when he initiated the Community Mental Health Centers Act of 1963. Federal funds were made available primarily for the establishment of new mental health centers nationwide, in order to provide a spectrum of comprehensive services to communities, including for those patients being "deinstitutionalized" from state hospitals. A series of major federal initiatives followed over the next 25 years. Subsequent amendments to the Community Mental Health Centers Act expanded the requirements for community services provided by the federally funded centers. The Community Support Program of the National Institute of Mental Health (1977) emphasized a comprehensive network of resources and programs focused on the chronically mentally ill in the community. This program downplayed the role of the state hospital within this comprehensive spectrum of care. The Final Report of the President's Commission on Mental Health in 1978 identified the chronically mentally ill as an unserved and underserved population. The Carter administration's backing of a new Mental Health Systems Act in the late 1970s again strengthened the national commitment to comprehensive, interactive, community-

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* Associate professor of psychiatry, John A. Burns School of Medicine, University of Hawaii; director/medical director of psychiatry, Castle Medical Center; formerly chief, Mental Health Division, Department of Health, State of Hawaii (1977-1987).

based systems of care that placed the mentally ill patient in the center of a responsive, accessible network of care. Over the years, numerous other federal programs and grants, in such areas as human resource development, have emphasized the need for development of each state's capacity to improve community-based services. The federal government has provided incentives repeatedly, in the way of funding and technical assistance, to the states in order to move treatment systems toward high-quality, comprehensive, community-based systems of care.

Individual states have simultaneously, through their own efforts, embarked upon programs to better serve the mentally ill in general, and the SDMI in particular. The record within the State of Hawaii during the 1960s and 1970s is actually quite exceptional. Alma Takata, currently the acting chief of the Department of Health's Mental Health Division, describes that history in her article, "The History of Care of the Seriously Disabled Mentally Ill in Hawaii." Hawaii's concerted deinstitutionalization effort and the rapid and effective establishment of community mental health centers had largely been achieved by the early 1970s, more successfully than most other states in the country. This success was the result of strong administrative and legislative interest and support by the State, and by concerted, far-reaching policy decisions, such as the transfer of staff and department heads from the State Hospital to the community programs, as well as the widespread development of family-care homes. The State has received many grants and much recognition for its notable efforts and commitment over the past 25 years. Much has been achieved for the mentally ill population, including the SDMI, during this time.

Despite this history of committed effort and notable achievement, the State of Hawaii, in the view of a small but visible national organization, ranks as the worst in the country in terms of its care of the seriously mentally ill. It would be too easy to ignore this report; knowledgeable observers do seriously question the validity of these ratings. The National Association of State Mental Health Program Directors, an organization which has much-vested interest in such a report, has refused to cooperate with the Public Citizen Health Research Group because of serious questions about its intent and methodology. In July 1986, The Government Accounting Office (GAO) in Washington responded to Hawaii Senator Daniel K. Inouye's inquiries as to how Hawaii came to be ranked last in the nation and whether any other studies supported such a conclusion. In part, Franklin A. Curtis, associate director of the GAO, wrote:

> The study's comparisons of state programs are subjective, based as they are on varying amounts and sources of data regarding the various state programs, and lacking in many areas objective criteria for judging and comparing program quality. . . . We believe that the ranking of individual states with the resultant implication that Hawaii, or any other state, is last or has the worst mental health program in the nation, is misleading. It implies a precision of measurement of program quality that is not consistent with the methods employed in the study. . . . We found no studies that attempt to rank states by the quality of their inpatient or outpatient programs and it is generally agreed by researchers that there is no known methodology for objectively ranking the quality of programs.

Nevertheless, is there not some basis for questioning the quality of care for the SDMI in Hawaii? Irrespective of the many good efforts of public and private providers of mental health care, why do such groups as the Families and Friends of Schizophrenics testify to the State legislature that:

> Today the mentally ill are not getting treated properly; they are not getting proper housing, they are not getting jobs, they are not getting insured. Far too many are homeless and far too many are in jail. (Hearing before the State Senate and House Committees on Health, October 7, 1988).

Why does the Mental Health Association of Hawaii say that:

> . . . the Department of Health has received many specific proposals for corrective measures over the last few years. There are demonstration programs attempting to implement these measures. There are personnel who understand and support these measures, but the administrative and fiscal support for applying these measures *systemwide* is not in place. The question is not so much 'what should we do' but 'why aren't we doing what we know we need to do?' (same hearing)

On a national level, John A. Talbot, MD, a leading authority on SDMI issues, has expressed frustration about the fact that the country and states in general — despite the repetitive, concerted, widely backed federal and state efforts and initiatives — are not implementing what are now known to be effective approaches to this patient population. At the recent American Psychiatric Association's Hospital and Community Psychiatry Annual Meeting (New Orleans, October 1988), Talbot presented the lessons that have been learned since deinstitutionalization began 33 years ago, stating that, "if we continue to ignore these lessons, we do so at our own and our patients' peril."

Given the many voices of concern and criticism, it would be difficult to deny the reality of substantial problems. But what is the true nature and basis of these problems? Some would quickly attribute the deficiencies to a lack of leadership, commitment, vision, goals, plans, programs or money. Clearly, funding has been inadequate, given the enormity of the problem and the complexities of providing intensive and comprehensive services to perhaps one of the most severely disabled populations of our community. Resolution of the problem of mental health care through effective community-based services are a greater challenge for resources and organizations than implementing it through centralized hos-

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pital services. The mentally ill, and certainly the SDMI, are still the stepchild of public concern when compared with other populations in need.

Is more money the single solution? I do not think so. What about better leadership, new vision and plans and such like? All of these help but they usually do not address the fundamental problems. The careful historian of public mental health care might well notice that this field has probably had more than its share of committed, visionary leaders and staff. Mental health organizations have wearied of frequent reorganizations, multiple task forces and committees, consultants and studies, with hordes of new directions, goals and plans promising salvation. Too frequently, there is an implementation breakdown between these visions and what services are delivered at the front line, particularly in public systems. Dr. John Blaylock, a former Hawaii Mental Health Division Chief, likened the experience to sitting at the steering wheel of a truck but having the steering mechanism disconnected. It is something like setting out to travel from the West to the East Coast in one day, by tractor. The destination or goal may be clear; however with the best road maps, signposts, guides, directions and driver, the task cannot be achieved without drastically altering the nature of the machine or actually changing the vehicle.

Traditionally, the care of the mentally ill, as in tuberculosis and leprosy, has largely been the responsibility of the public health sector. In the past few decades, government acted quite concertedly to develop major systems of care for the multitudes of mentally ill who were largely unserved. Could it be that this much-needed government response of yesteryears is the most critical obstacle to quality service delivery today?

This is a most crucial question for Hawaii, as we are one of only two or three states where the community mental health centers and hospitals have been state-operated. Most centers nationwide are county, or privately, managed, with much decentralization into smaller, more efficient and flexible, autonomous units. However, in all states, government plays a major role in defining and dictating the total system of care.

Why is it that government control and operations might be a significant hindrance to effective mental health service delivery? To begin with, it is important to remember that there is overwhelming complexity and challenge to providing quality care to seriously and chronically mentally ill. For these individuals, excellent services require optimum programming, personnel, funding and administrative flexibility. That is where public systems have a difficult time. Government organizations are superior when stability, predictability, deliberation, checks and balances and meticulous thoroughness are needed, but they do not cope well with changing demands. This is a characteristic of the system, not of the individuals within the system, many of whom may sincerely want the organizational function and product to be different. Much of the problem is an undesired symptom of largeness.

In the 1960s and 1970s, many felt that the source of poor care was the state hospital or institution. "Institutionalization" was not as much the problem as another more fundamental malady that tends to infect many large organizations, which has been called "Institutionalism." This refers to a pervasive condition characterized by organizational behaviors that predominantly address the system's internal expectations, traditions and complex dynamics, and give lesser or secondary consideration to the organization's original purpose and mission. The day-to-day decisions and operations are dictated more by what the system allows, than what is best to fulfill a mission task. Administrative, fiscal and personnel policies and actions tend to reflect the structure, process or culture of the organization, rather than its flexibility in response to service needs.

How does this relate to Hawaii's care of the SDMI? In the past, there was clear rationale and value to the highly centralized, tightly controlled, very structured state-operated system in its rapid and orderly development of statewide inpatient and outpatient services. However, the State's population, the mental health system and extent and complexity of community need have grown substantially. Quality of care demands workable organizational flexibility and responsiveness.

It is extremely difficult to maintain excellent services in a system where it may take many months or years to reorganize programs and staff to meet new needs; where several layers of administrative and sometimes legislative discussion and decision-making are required for simple operational or procedural modification; where multiple and prolonged negotiations are needed to effect changes in working conditions; where good employee performance is not meaningfully rewarded and where major obstacles impede appropriate and timely corrective remedies for poor performance; where salaries are inappropriately fixed to statewide standards and criteria; where it is very difficult to obtain necessary equipment and facilities on a timely basis. The sad aspect of this problem is that individual staff members, at all levels, are aware of, and resent, these realities but are impotent in having an impact on the well-ingrained culture that persists regardless. Dedicated leadership and staff come and go, but the stolid bureaucracy ambles along, unchangeable.

Mandating and planning for organizational change is not enough. Long-term solutions that ensure quality services for complex problems, particularly in reference to the SDMI, require major, substantial system-restructuring. The emphasis at this time must be on how the system works, not on what the goals and purposes are. The latter are apparent, but are worthless unless there are clear, workable mechanisms to accomplish them.

Restructuring must achieve the formation or sanction of small organizational service units that have sufficient administrative, fiscal and personnel management autonomy to control decision-making in matters that affect the delivery of services. Authority over programs, expenditures, hours of operation, staff functions, salaries, incentives and discipline, agreements, etc., must be under the full control of the directors (and boards) of these small

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Over the Editor's Desk

STEPHEN R.P.K. BRADY, MD

DIGITALIS-LIKE SUBSTANCE DISCOVERED IN HUMAN PLASMA—WASHINGTON, D.C, November 16, 1988—Researchers at The Upjohn Co. and the University of Maryland have isolated a substance in human plasma that may be directly involved in the development of high blood pressure.

A research paper describing the substance, called digitalis-like factor or DLF, was presented by John M. Hamlyn, PhD, of the University of Maryland's School of Medicine, at the American Heart Association annual meeting, held November 14-17 in Washington, D.C.

The medicine digitalis is derived from the foxglove plant. Previous research has shown that a variety of cells, including those of the heart and blood vessels, have receptors to which digitalis binds. This observation led to speculation that humans produce a chemically similar substance, according to James Ludens, PhD, co-author of the paper and senior research scientist at The Upjohn Co.'s cardiovascular disease research laboratories in Kalamazoo, Mich.

"This substance is only present in very small amounts," Ludens said. "We've processed enormous quantities of human plasma over the past six years, and still need to isolate more DLF to conduct all the necessary experiments to identify its chemical structure."

By identifying both the chemical composition and origins of DLF, researchers hope to find a way to block its action in order to treat those patients who suffer from high blood pressure because of abnormal levels of DLF.

Patients with congestive heart failure are given digitalis to stimulate heart muscles, improving cardiac output. In these patients, a beneficial effect of digitalis is believed to be related to the effect of the compound on a "sodium pump" in heart muscle cells.

This same mechanism of action is present in smooth muscle cells in a blood vessel wall, which are always in a state of partial contraction, or resting tension. In people with high blood pressure, the muscle cells contract more than they should. For these cells to contract, the amount of calcium inside the cells must rise above a threshold level. The calcium level inside the cells is governed by the ability of cells to pump out sodium. When sodium levels in the cell are low, calcium levels are also low and blood pressure remains normal.

Digitalis or DLF inhibits this "sodium pump," thereby preventing reduction of sodium levels that build up within cells by other mechanisms. Consequently, calcium levels inside the cell rise, increasing the tension of the vessel walls and thereby elevating blood pressure.

"DLF has a great affinity for the sodium pump, inhibiting its actions," Ludens said. "It would not take much of this compound to have an effect in raising blood pressure."

He said researchers are now trying to purify enough DLF so its chemical composition can be determined. Scientists are also attempting to determine where DLF secretions originate in the body.

Once the exact chemical composition of DLF is determined and its source pinpointd, Ludens hopes biotechnology can be put into play to produce greater quantities of DLF than can be generated now.

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service organizations. No such agency should be larger than that which allows the decision-making director to have daily contact with all members of the staff. Payment for services, as well as staff salaries, should be directly tied to quality and quantity of services provided. The issue is not whether these agencies are public, or use private operations, but is the degree to which these organizational characteristics can be achieved. The State's role overall should be to ensure that these agencies are optimally responsive to community needs, in the most appropriate and cost-effective manner. Sometimes, in attempting to operate the service programs, the more crucial oversight responsibility may be compromised.

The State of Hawaii is not the worst in the country in its services to our SDMI population. Without question, more ideas, strategies and funds are needed. However, unless major surgery is soon applied to the fundamental organizational organs of the State bureaucracy, and unless the State's mission dictates operations, our low ranking may continue. Without this substantial restructuring of the system, we may never be first, and the most needy of the mentally ill population of Hawaii will continue to suffer.

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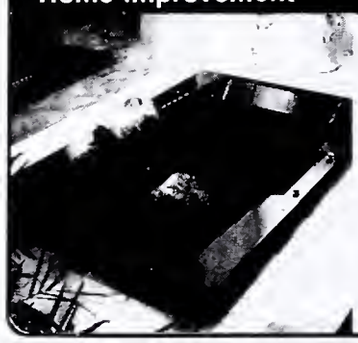
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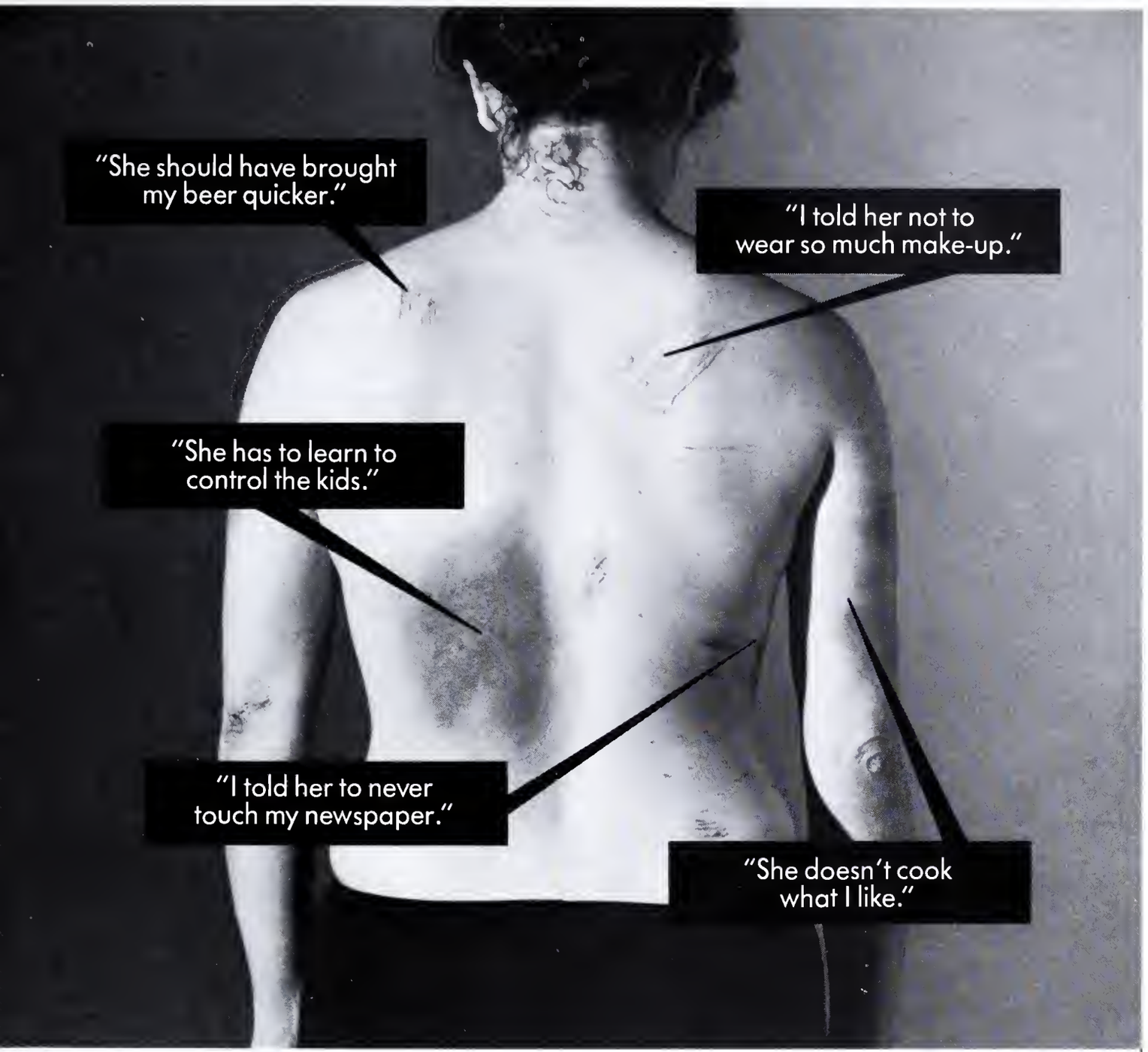
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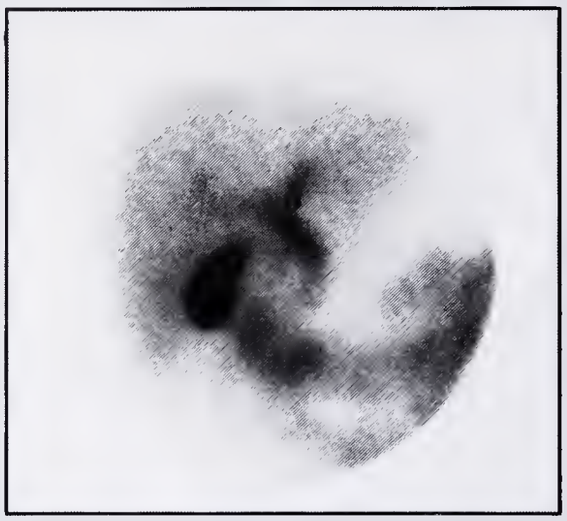
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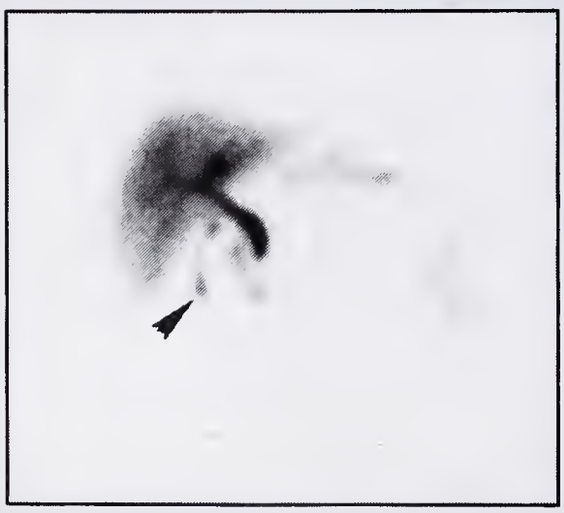
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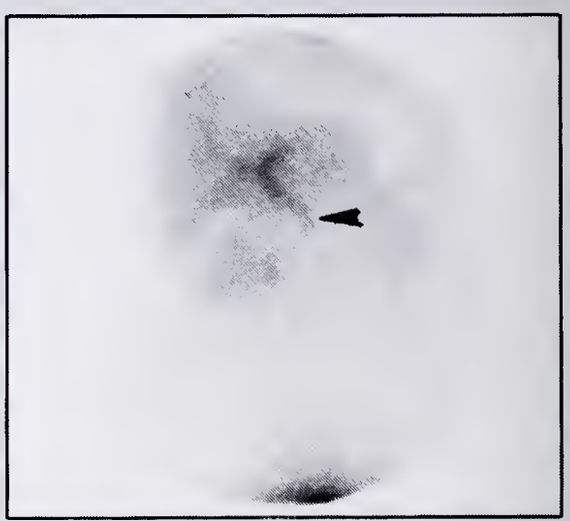
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Hypotension: Excessive hypotension is rare in uncomplicated hypertensive patients treated with VASOTEC alone. Heart failure patients given VASOTEC commonly have some reduction in blood pressure, especially with the first dose, but discontinuation of therapy for continuing symptomatic hypotension usually is not necessary when dosing instructions are followed, caution should be observed when initiating therapy. (See DOSAGE AND ADMINISTRATION.) Patients at risk for excessive hypotension, sometimes associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death, include those with the following conditions or characteristics: heart failure, hyponatremia, high-dose diuretic therapy, recent intensive diuresis or increase in diuretic dose, renal dialysis, or severe volume and/or salt depletion of any etiology. It may be advisable to eliminate the diuretic (except in heart failure patients), reduce the diuretic dose, or increase salt intake cautiously before initiating therapy with VASOTEC in patients at risk for excessive hypotension who are able to tolerate such adjustments. (See PRECAUTIONS, *Drug Interactions* and ADVERSE REACTIONS.) In patients at risk for excessive hypotension, therapy should be started under very close medical supervision and such patients should be followed closely for the first two weeks of treatment and whenever the dose of enalapril and/or diuretic is increased. Similar considerations may apply to patients with ischemic heart disease or cardiovascular disease in whom an excessive fall in blood pressure could result in a myocardial infarction or cerebrovascular accident. If excessive hypotension occurs, the patient should be placed in supine position and, if necessary, receive an intravenous infusion of normal saline. A transient hypotensive response is not a contraindication to further doses of VASOTEC, which usually can be given without difficulty once the blood pressure has stabilized. If symptomatic hypotension develops, a dose reduction or discontinuation of VASOTEC or concomitant diuretic may be necessary.

Neutropenia/Agranulocytosis: Another ACE inhibitor, captopril, has been shown to cause agranulocytosis and bone marrow depression, rarely in uncomplicated patients but more frequently in patients with renal impairment, especially if they also have a collagen vascular disease. Available data from clinical trials of enalapril are insufficient to show that enalapril does not cause agranulocytosis at similar rates. Foreign marketing experience has revealed several cases of neutropenia or agranulocytosis in which a causal relationship to enalapril cannot be excluded. Periodic monitoring of white blood cell counts in patients with collagen vascular disease and renal disease should be considered.

Precautions: *General: Impaired Renal Function:* As a consequence of inhibiting the renin-angiotensin-aldosterone system, changes in renal function may be anticipated in susceptible individuals. In patients with severe heart failure whose renal function may depend on the activity of the renin-angiotensin-aldosterone system, treatment with ACE inhibitors, including VASOTEC, may be associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death.

In clinical studies in hypertensive patients with unilateral or bilateral renal artery stenosis, increases in blood urea nitrogen and serum creatinine were observed in 20% of patients. These increases were almost always reversible upon discontinuation of enalapril and/or diuretic therapy. In such patients, renal function should be monitored during the first few weeks of therapy.

Some patients with hypertension or heart failure with no apparent preexisting renal vascular disease have developed increases in blood urea and serum creatinine, usually minor and transient, especially when VASOTEC has been given concomitantly with a diuretic. This is more likely to occur in patients with preexisting renal impairment. Dosage reduction and/or discontinuation of the diuretic and/or VASOTEC may be required.

Evaluation of patients with hypertension or heart failure should always include assessment of renal function. (See DOSAGE AND ADMINISTRATION.)

Hyperkalemia: Elevated serum potassium (> 5.7 mEq/L) was observed in approximately 1% of hypertensive patients in clinical trials. In most cases these were isolated values which resolved despite continued therapy. Hyperkalemia was a cause of discontinuation of therapy in 0.28% of hypertensive patients. In clinical trials in heart failure, hyperkalemia was observed in 3.8% of patients, but was not a cause for discontinuation.

Risk factors for the development of hyperkalemia include renal insufficiency, diabetes mellitus, and the concomitant use of potassium-sparing diuretics, potassium supplements, and/or potassium-containing salt substitutes, which should be used cautiously, if at all, with VASOTEC. (See *Drug Interactions.*)

Surgery/Anesthesia: In patients undergoing major surgery or during anesthesia with agents that produce hypotension, enalapril may block angiotensin II formation secondary to compensatory renin release. If hypotension occurs and is considered to be due to this mechanism, it can be corrected by volume expansion.

Information for Patients:

Angioedema: Angioedema, including laryngeal edema, may occur especially following the first dose of enalapril. Patients should be so advised and told to report immediately any signs or symptoms suggesting angioedema (swelling of face, extremities, eyes, lips, tongue, difficulty in swallowing or breathing) and to take no more drug until they have consulted with the prescribing physician.

Hypotension: Patients should be cautioned to report lightheadedness especially during the first few days of therapy. If actual syncope occurs, the patients should be told to discontinue the drug until they have consulted with the prescribing physician.

All patients should be cautioned that excessive perspiration and dehydration may lead to an excessive fall in blood pressure because of reduction in fluid volume. Other causes of volume depletion such as vomiting or diarrhea may also lead to a fall in blood pressure; patients should be advised to consult with the physician.

Hyperkalemia: Patients should be told not to use salt substitutes containing potassium without consulting their physician.

Neutropenia: Patients should be told to report promptly any indication of infection (e.g., sore throat, fever) which may be a sign of neutropenia.

NOTE: As with many other drugs, certain advice to patients being treated with enalapril is warranted. This information is intended to aid in the safe and effective use of this medication. It is not a disclosure of all possible adverse or intended effects.

Drug Interactions.

Hypotension: Patients on Diuretic Therapy: Patients on diuretics and especially those in whom diuretic therapy was recently instituted may occasionally experience an excessive reduction of blood pressure after initiation of therapy with enalapril. The possibility of hypotensive effects with enalapril can be minimized by either discontinuing the diuretic or increasing the salt intake prior to initiation of treatment with enalapril. If it is necessary to continue the diuretic, provide close medical supervision after the initial dose for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and DOSAGE AND ADMINISTRATION.)

Agents Causing Renin Release: The antihypertensive effect of VASOTEC is augmented by antihypertensive agents that cause renin release (e.g., diuretics).

Other Cardiovascular Agents: VASOTEC has been used concomitantly with beta-adrenergic-blocking agents, methyldopa, nitrates, calcium-blocking agents, hydralazine, prazosin, and digoxin without evidence of clinically significant adverse interactions.

Agents Increasing Serum Potassium: VASOTEC attenuates potassium loss caused by thiazide-type diuretics. Potassium-sparing diuretics (e.g., spironolactone, triamterene, or amiloride), potassium supplements, or potassium-containing salt substitutes may lead to significant increases in serum potassium. Therefore, if concomitant use of these agents is indicated because of demonstrated hypokalemia, they should be used with caution and with frequent monitoring of serum potassium. Potassium-sparing agents should generally not be used in patients with heart failure receiving VASOTEC.

Lithium: A few cases of lithium toxicity have been reported in patients receiving concomitant VASOTEC and lithium and were reversible upon discontinuation of both drugs. Although a causal relationship has not been established, it is recommended that caution be exercised when lithium is used concomitantly with VASOTEC and serum lithium levels should be monitored frequently.

Pregnancy—Category C: There was no fetotoxicity or teratogenicity in rats treated with up to 200 mg/kg/day of enalapril (333 times the maximum human dose). Fetotoxicity, expressed as a decrease in average fetal weight, occurred in rats given 1200 mg/kg/day of enalapril but did not occur when these animals were supplemented with saline. Enalapril was not teratogenic in rabbits. However, maternal and fetal toxicity occurred in some rabbits at doses of 1 mg/kg/day or more. Saline supplementation prevented the maternal and fetal toxicity seen at doses of 3 and 10 mg/kg/day, but not at 30 mg/kg/day (50 times the maximum human dose).

Radioactivity was found to cross the placenta following administration of labeled enalapril to pregnant hamsters.

There are no adequate and well-controlled studies in pregnant women. VASOTEC® (Enalapril Maleate, MSD) should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: Milk in lactating rats contains radioactivity following administration of ^{14}C enalapril maleate. It is not known whether this drug is secreted in human milk. Because many drugs are secreted in human milk, caution should be exercised when VASOTEC is given to a nursing mother.

Pediatric Use: Safety and effectiveness in children have not been established.

Adverse Reactions: VASOTEC has been evaluated for safety in more than 10,000 patients, including over 1000 patients treated for one year or more. VASOTEC has been found to be generally well tolerated in controlled clinical trials involving 2987 patients.

Hypertension: The most frequent clinical adverse experiences in controlled trials were: headache (5.2%), dizziness (4.3%), and fatigue (3%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in controlled clinical trials were: diarrhea (1.4%), nausea (1.4%), rash (1.4%), cough (1.3%), orthostatic effects (1.2%), and asthenia (1.1%).

Heart Failure: The most frequent clinical adverse experiences in both controlled and uncontrolled trials were: dizziness (7.9%), hypotension (6.7%), orthostatic effects (2.2%), syncope (2.2%), cough (2.2%), chest pain (2.1%), and diarrhea (2.1%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in both controlled and uncontrolled clinical trials were: fatigue (1.8%), headache (1.8%), abdominal pain (1.6%), asthenia (1.6%), orthostatic hypotension (1.6%), vertigo (1.6%), angina pectoris (1.5%), nausea (1.3%), vomiting (1.3%), bronchitis (1.3%), dyspnea (1.3%), urinary tract infection (1.3%), rash (1.3%), and myocardial infarction (1.2%).

Other serious clinical adverse experiences occurring since the drug was marketed or adverse experiences occurring in 0.5% to 1% of patients with hypertension or heart failure in clinical trials in order of decreasing severity within each category:

Cardiovascular: Myocardial infarction or cerebrovascular accident, possibly secondary to excessive hypotension in high-risk patients (see WARNINGS, *Hypotension*); cardiac arrest; pulmonary embolism and infarction; rhythm disturbances, atrial fibrillation, palpitation.

Digestive: Ileus, pancreatitis, hepatitis or cholestatic jaundice, melena, anorexia, dyspepsia, constipation, glossitis.

Nervous/Psychiatric: Depression, confusion, ataxia, somnolence, insomnia, nervousness, paresthesia.

Urogenital: Renal failure, oliguria, renal dysfunction (see PRECAUTIONS and DOSAGE AND ADMINISTRATION), prostate hypertrophy.

Respiratory: Bronchospasm, rhinorrhea, asthma, upper respiratory infection.

Skin: Herpes zoster, pruritus, alopecia, flushing, photosensitivity.

Other: Muscle cramps, hyperhidrosis, impotence, blurred vision, taste alteration, tinnitus.

A symptom complex has been reported which may include fever, myalgia, and arthralgia; an elevated erythrocyte sedimentation rate may be present. Rash or other dermatologic manifestations may occur. These symptoms have disappeared after discontinuation of therapy.

Angioedema: Angioedema has been reported in patients receiving VASOTEC (0.2%). Angioedema associated with laryngeal edema may be fatal. If angioedema of the face, extremities, lips, tongue, glottis, and/or larynx occurs, treatment with VASOTEC should be discontinued and appropriate therapy instituted immediately. (See WARNINGS.)

Hypotension: In the hypertensive patients, hypotension occurred in 0.9% and syncope occurred in 0.5% of patients following the initial dose or during extended therapy. Hypotension or syncope was a cause for discontinuation of therapy in 0.1% of hypertensive patients. In heart failure patients, hypotension occurred in 6.7% and syncope occurred in 2.2% of patients. Hypotension or syncope was a cause for discontinuation of therapy in 1.9% of patients with heart failure. (See WARNINGS.)

Clinical Laboratory Test Findings:

Serum Electrolytes: Hyperkalemia (see PRECAUTIONS), hyponatremia.

Creatinine, Blood Urea Nitrogen: In controlled clinical trials, minor increases in blood urea nitrogen and serum creatinine, reversible upon discontinuation of therapy, were observed in about 0.2% of patients with essential hypertension treated with VASOTEC alone. Increases are more likely to occur in patients receiving concomitant diuretics or in patients with renal artery stenosis. (See PRECAUTIONS.) In patients with heart failure who were also receiving diuretics with or without digitalis, increases in blood urea nitrogen or serum creatinine, usually reversible upon discontinuation of VASOTEC and/or other concomitant diuretic therapy, were observed in about 11% of patients. Increases in blood urea nitrogen or creatinine were a cause for discontinuation in 1.2% of patients.

Hemoglobin and Hematocrit: Small decreases in hemoglobin and hematocrit (mean decreases of approximately 0.3 g % and 1.0 vol %, respectively) occur frequently in either hypertension or heart failure patients treated with VASOTEC but are rarely of clinical importance unless another cause of anemia coexists. In clinical trials, less than 0.1% of patients discontinued therapy due to anemia.

Other (Causal Relationship Unknown): In marketing experience, rare cases of neutropenia, thrombocytopenia, and bone marrow depression have been reported.

Liver Function Tests: Elevations of liver enzymes and/or serum bilirubin have occurred.

Dosage and Administration: *Hypertension:* In patients who are currently being treated with a diuretic, symptomatic hypotension occasionally may occur following the initial dose of VASOTEC. The diuretic should, if possible, be discontinued for two to three days before beginning therapy with VASOTEC to reduce the likelihood of hypotension. (See WARNINGS.) If the patient's blood pressure is not controlled with VASOTEC alone, diuretic therapy may be resumed.

If the diuretic cannot be discontinued, an initial dose of 2.5 mg should be used under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions.*)

The recommended initial dose in patients not on diuretics is 5 mg once a day. Dosage should be adjusted according to blood pressure response. The usual dosage range is 10 to 40 mg per day administered in a single dose or in two divided doses. In some patients treated once daily, the antihypertensive effect may diminish toward the end of the dosing interval. In such patients, an increase in dosage or twice-daily administration should be considered. If blood pressure is not controlled with VASOTEC alone, a diuretic may be added.

Concomitant administration of VASOTEC with potassium supplements, potassium salt substitutes, or potassium-sparing diuretics may lead to increases of serum potassium (see PRECAUTIONS).

Dosage Adjustment in Hypertensive Patients with Renal Impairment: The usual dose of enalapril is recommended for patients with a creatinine clearance >30 mL/min (serum creatinine of up to approximately 3 mg/dL). For patients with creatinine clearance ≤30 mL/min (serum creatinine ≥3 mg/dL), the first dose is 2.5 mg once daily. The dosage may be titrated upward until blood pressure is controlled or to a maximum of 40 mg daily.

Heart Failure. VASOTEC is indicated as adjunctive therapy with diuretics and digitalis. The recommended starting dose is 2.5 mg once or twice daily. After the initial dose of VASOTEC, the patient should be observed under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions.*) If possible, the dose of the diuretic should be reduced, which may diminish the likelihood of hypotension. The appearance of hypotension after the initial dose of VASOTEC does not preclude subsequent careful dose titration with the drug, following effective management of the hypotension. The usual therapeutic dosing range for the treatment of heart failure is 5 to 20 mg daily given in two divided doses. The maximum daily dose is 40 mg. Once-daily dosing has been effective in a controlled study, but nearly all patients in this study were given 40 mg, the maximum recommended daily dose, and there has been much more experience with twice-daily dosing. In addition, in a placebo-controlled study which demonstrated reduced mortality in patients with severe heart failure (NYHA Class IV), patients were treated with 2.5 to 40 mg per day of VASOTEC, almost always administered in two divided doses. (See CLINICAL PHARMACOLOGY, *Pharmacodynamics and Clinical Effects.*) Dosage may be adjusted depending upon clinical or hemodynamic response. (See WARNINGS.)

Dosage Adjustment in Heart Failure Patients with Renal Impairment or Hyponatremia: In heart failure patients with hyponatremia (serum sodium <130 mEq/L) or with serum creatinine >1.6 mg/dL, therapy should be initiated at 2.5 mg daily under close medical supervision. (See DOSAGE AND ADMINISTRATION, *Heart Failure*, WARNINGS, and PRECAUTIONS, *Drug Interactions.*) The dose may be increased to 2.5 mg b.i.d., then 5 mg b.i.d. and higher as needed, usually at intervals of four days or more, if at the time of dosage adjustment there is not excessive hypotension or significant deterioration of renal function. The maximum daily dose is 40 mg.

For more detailed information, consult your MSD representative or see Prescribing Information. Merck Sharp & Dohme, Division of Merck & Co., Inc., West Point, PA 19486. J6VS18R(815)

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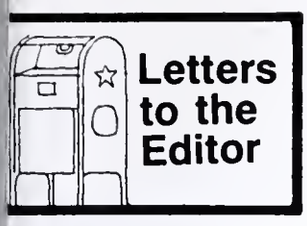
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To the Editor:

David McEwan's article, "A.D. 2005: The President calls for deregulation of the medical profession," expressed many of my concerns and frustrations regarding the ongoing deterioration of the quality of medical practice. But, I find that I get bored listening to the same complaints over and over, especially when it sounds like I'm listening to myself.

Two and a half years ago I moved to Hawaii from California. California, as you know, has been a hotbed of political activism in medicine as well as in other areas. I have found that Hawaii is just not that way. One of the reasons I like Hawaii so much is precisely because it is much more relaxed, but this also means that problems here seem to be ignored as long as possible rather than solved expeditiously.

Be aware, however, that there are many folks in Hawaii and elsewhere who are not relaxed. Medicine has its enemies. Sometimes I think it dates back to a child's anger and frustration toward authoritarian parents. Lawmakers seem to delight in "getting" the doctor in much the same way that a child delights in the fantasy of rebelling against the parent. Whereas many regulations upon us may be for quality control, there are even more, that are simply provocations that I see as lawmakers' ways of trying to control the uncontrollable.

Witness the Medicare attestation required for hospital medical records. Doctors must be annually humiliated by signing a document that they are not only telling the truth, but that they are aware that they will go to jail or worse if they are *not* telling the truth. Do lawyers have to sign something like that every year in order to practice at their courthouse? Do legislators sign that kind of document, ever? Do hospital administrators, or medical record personnel, or insurance company executives sign anything like that?

Of course, doctors are also responsible for encouraging dependency (and its direct consequence, rebellion) on the part of their patients and I see a lot more of that here in Hawaii than I ever saw in California.

The old style of plantation medicine where the doctor makes the appointments, signs all the papers and then sends the bill to the insurance company so that the patient has the least possible role in his/her own medical care is still the norm here.

That has become the desired system for many of the prepaid medical care plans to use, as it offers better patient "control." Marcus Welby's role is now played by the "gatekeeper" in prepaid health plans.

What of doctors' child-like dependency on our "parents," the insurance companies? The state's largest private insurer is HMSA. When signing a contract for anything else, don't you insist upon being told what the contract will cost you or earn for you? Yet when we sign up with HMSA we agree to take what they want to pay *and they do not even have to tell us what they will pay.* WE TOLERATE THAT AS NORMAL BUSINESS.

So, what can be done? After sounding more like a psychiatrist than an orthopedic surgeon, I have to suggest that orthopedic approaches will be far more likely to succeed than will psychiatric approaches. It is sometimes necessary to draw a little blood in order to get the cure.

I have observed that if I can't make things change myself, the best way to instigate change is to find the meanest guy on the block to support me. In California, the Medical Society was never mean enough; but the Union was. Sanford Marcus, the founder of the Union of American Physicians and Dentists, used to speak to us and tell it like it was. He always reminded me of an old fashioned Union organizer from the 1930s; but the man was (and is) *SMART.* His problem has been that we as physicians felt too genteel to accept the notion that we're being systematically raped by government, by the legal profession and by the insurance industry, in joyous collusion. They are organized and we are not! Therefore, they will always win. What is truly tragic, is that we as physicians are not the main losers. The worst of the damage is to every one of our patients.

How many of us can honestly say that "competition," that sacrosanct concept of the American Way, has improved the quality of patient care? All I see it doing is raising the cost of medical care and creating hostility between competing physician groups. That has never, and will never, enhance quality of medical care.

Here in Hawaii, the Federation of Physicians and Dentists is trying its best to fight the forces of stupidity and arrogance in our Legislature. But they are also having to fight the even greater force of physician indifference and inertia. ►

(Continued)

Unfortunately, the Hawaii Medical Association seems to be the representative of that latter force of "don't make waves." Here in Kona, we have entertained the notion of the whole West Hawaii County Medical Society switching affiliation to the Federation. I doubt we'll do it because, here too, we make changes as gradually as possible.

If every physician in this State who has ever grumbled about "The System" would be willing to invest just about three weeks worth of his/her current malpractice insurance premium, they could become members of the Federation. That's all it takes. The Federation would get the money and manpower and financial support it needs, and then, folks, we would see some real change around here.

Think about it. Then do something about it.

Barry Blum, MD
Orthopedic Surgery

The Editor Replies

We are afraid that your concluding sentences, Barry, are right on the mark, but for a different reason.

Indifference, apathy and inertia may be factors in our reluctance to join the Hawaii Federation of Physicians and Dentists; however, it is in the genes of the profession to remain free of any other than the individual patient as the one and only person to whom the physician is beholden. True, we belong to clinics, groups, partnerships, HMOs, PPOs, etc. ad infinitum; we serve as paid professionals for government agencies, the military, the USPHS and many other "systems" of health care (a euphemism for medical care of the ill, injured and disabled). Joining the Union imposes another layer of supervision.

However, the "good" physician resists any and all "other bosses" by practicing the kind of medicine that benefits his or her patient. Most physicians are in this category, no matter in which milieu they function.

J.I. Frederick Reppun, MD

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BRIEF SUMMARY

CONTRAINDICATIONS
There are no known contraindications to the use of sucralfate.

PRECAUTIONS
Duodenal ulcer is a chronic, recurrent disease. While short-term treatment with sucralfate can result in complete healing of the ulcer, a successful course of treatment with sucralfate should not be expected to alter the post-healing frequency or severity of duodenal ulceration.

Drug Interactions: Animal studies have shown that simultaneous administration of CARAFATE (sucralfate) with tetracycline, phenytoin, digoxin, or cimetidine will result in a statistically significant reduction in the bioavailability of these agents. The bioavailability of these agents may be restored simply by separating the administration of these agents from that of CARAFATE by two hours. This interaction appears to be nonsystemic in origin, presumably resulting from these agents being bound by CARAFATE in the gastrointestinal tract. The clinical significance of these animal studies is yet to be defined. However, because of the potential of CARAFATE to alter the absorption of some drugs from the gastrointestinal tract, the separate administration of CARAFATE from that of other agents should be considered when alterations in bioavailability are felt to be critical for concomitantly administered drugs.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Chronic oral toxicity studies of 24 months' duration were conducted in mice and rats at doses up to 1 gm/kg (12 times the human dose). There was no evidence of drug-related tumorigenicity. A reproduction study in rats at doses up to 38 times the human dose did not reveal any indication of fertility impairment. Mutagenicity studies were not conducted.

Pregnancy: Teratogenic effects. Pregnancy Category B. Teratogenicity studies have been performed in mice, rats, and rabbits at doses up to 50 times the human dose and have revealed no evidence of harm to the fetus due to sucralfate. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when sucralfate is administered to a nursing woman.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS
Adverse reactions to sucralfate in clinical trials were minor and only rarely led to discontinuation of the drug. In studies involving over 2,500 patients treated with sucralfate, adverse effects were reported in 121 (4.7%).

Constipation was the most frequent complaint (2.2%). Other adverse effects, reported in no more than one of every 350 patients, were diarrhea, nausea, gastric discomfort, indigestion, dry mouth, rash, pruritus, back pain, dizziness, sleepiness, and vertigo.

OVERDOSAGE
There is no experience in humans with overdosage. Acute oral toxicity studies in animals, however, using doses up to 12 gm/kg body weight, could not find a lethal dose. Risks associated with overdosage should, therefore, be minimal.

DOSAGE AND ADMINISTRATION
The recommended adult oral dosage for duodenal ulcer is 1 gm four times a day on an empty stomach.

Antacids may be prescribed as needed for relief of pain but should not be taken within one-half hour before or after sucralfate.

While healing with sucralfate may occur during the first week or two, treatment should be continued for 4 to 8 weeks unless healing has been demonstrated by x-ray or endoscopic examination.

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Reference:
1. Eliakim R, Ophir M, Rachmilewitz D: *J Clin Gastroenterol* 1987;9(4):395-399.

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Hospital utilization

Frank K. Abou-Sayf, PhD, was the Chief Statistician on the staff of the Hawaii Medical Service Association (HMSA) when he submitted his article. He is currently Director of Statistics and Research at Kaiser Permanente Hawaii.

In this issue of the JOURNAL, he gives us an idea of the trends in utilization of in-patient hospital services that have occurred since 1978. In spite of increasing numbers of admissions, such utilization has diminished markedly as a result of decreasing stays in hospital, in Hawaii as well as nationally.

Abou-Sayf does not venture to opine whether this is good or bad in terms of the outcome — the better return to good health on the part of the patient. The statistics with which he has to deal do not, unfortunately, include what has happened to the in-patient care of the elderly — those 65 and above — for a reason that leaves us guessing, namely that such data are unavailable from Medicare.

Are the Feds trying to hide what may be a black mark against Medicare? That senior citizens are being deprived of adequate and proper care in the interests of "cost-control"? We wonder.

Abou-Sayf has another article coming up in the future issue of the JOURNAL, one that will generate even more interest than this one. He will be discussing the impact of DRGs in relation to several alternative approaches to determining the efficacy of "an in-patient, per-case, reimbursement system."

We are pleased to have HMSA include, in the pages of the JOURNAL, the findings of its wealth of data on how patients are being cared for under a third party, medical-insurance, coverage system; HMSA's subscribers include a large cohort of our population.

J.I. Frederick Reppun, MD
Editor

Students' writings

We welcome the input of the students of medicine — resident house officers in training, as well as students in our medical schools — to the JOURNAL. We thank their preceptors and the attendings in the faculty who guide these neophytes in producing these articles that are the result of their analytical studies and research.

In this issue of the JOURNAL we have assembled three of these papers.

Jeff Nakamura at Kuakini Medical Center had under his wing students Andrea Milbourne and Scott Nakamura, who reviewed a method of detection of genetic defects for our edification.

Norman Goldstein, dermatologist in private practice, guided Douglas Duvauchelle, house doctor, in writing about the possibility of malignancy in trophic ulcers in patients with leprosy. Norman also encouraged UHSM IV student Linda Ann Tom in an exhaustive report on KS in AIDS.

We would encourage our Hawaii medical students and our resident house doctors to submit more of their refreshing "new" looks at our medical problems.

J.I. Frederick Reppun, MD
Editor

An Analysis of Hospital Utilization in Hawaii

*Frank K. Abou-Sayf, MA, MS, PhD**

The objective of this study was to identify and analyze trends in hospital utilization over the past decade in Hawaii. The findings indicate that hospital utilization has dropped significantly, though not steadily, between 1976 and 1984. This drop can be attributed to steadily shrinking lengths of stay and not to fewer admissions, the latter having, in fact, increased over the years.

Introduction

Hospital utilization has been declining nationally during the past decade.[1,2] To determine whether the same trend has occurred in Hawaii — traditionally one of the states with the lowest overall health-care utilization patterns hospital data were collected on the Hawaii Medical Service Association's (HMSA) largest coverage plan, commonly known as Plan 4, over a period of eight years, from 1976 to 1984. Data were collected for the data periods 1976, 1978, 1980, 1982 and 1984. The total cumulative membership for Plan 4 amounted to 1,174,014 over the entire span, or an average of 235,003 members for each of the five data periods. Longitudinal analyses were conducted using year as the independent variable, and age, sex, relationship and diagnosis as the dependent variables.

Analysis by Age, Sex, and Relationship

Data on utilization rates, admissions, and average lengths of stay (as measured by the ratio of inpatient days to admissions) are presented in Table 1.

This table shows that utilization rates in Hawaii have been declining since 1976. The rate for the total group dropped from 388.54 in 1976 to 274.80 in 1984. There was, however, an increase between 1978 (323.75) and 1980 (334.07). The trend was the same when the data were broken down into males, females, subscribers, spouses and children (Figure 1).

TABLE 1

Days Per Thousand, Admissions & Lengths of Stay

Days / 1000

Year	Total	Males	Females	Subs	Spouses	Children
1976	388.54	330.37	445.15	432.24	659.80	162.99
1978	323.75	268.91	376.80	372.74	520.21	125.38
1980	334.07	273.11	392.70	372.75	551.24	134.24
1982	318.10	249.12	383.86	363.81	488.42	133.42
1984	274.80	217.84	330.13	302.40	451.82	124.55
% Change	-29.27	-34.06	-25.84	-30.04	-31.52	-23.58

Admissions

Year	Total	Males	Females	Subs	Spouses	Children
1976	84.82	64.50	104.61	89.42	151.62	38.65
1978	83.64	65.59	101.11	90.22	140.36	38.14
1980	92.99	71.51	113.66	87.22	143.47	72.01
1982	95.29	74.43	115.18	88.87	135.06	82.19
1984	85.95	67.14	104.22	78.55	122.41	80.50
% Change	1.33	4.09	-0.37	-12.16	-19.27	108.28

Lengths of Stay

Year	Total	Males	Females	Subs	Spouses	Children
1976	4.58	5.12	4.26	4.83	4.35	4.22
1978	3.87	4.10	3.73	4.13	3.71	3.29
1980	3.59	3.82	3.46	4.27	3.84	1.86
1982	3.34	3.35	3.33	4.09	3.62	1.62
1984	3.20	3.24	3.17	3.85	3.69	1.55
% Change	-30.13	-36.72	-25.59	-20.29	-15.17	-63.27

A breakdown by age (excluding ages 65 and over because of unavailability of Medicare data) showed that the decline in hospital utilization was mainly attributed to two age groups (Figure 2): Infants, where utilization declined by 41% between 1976 and 1982; and by 36% between 1976 and 1984; and members 55 and over, where utilization of 55- to 59-year-olds declined by 48% between 1976 and 1984.

To explain further the observed drop in hospital utilization, data on admissions and lengths of stay for the period between 1976 and 1984 were analyzed. The results (Table 1 and Figure 3) show that, between 1976 and 1984, admissions have actually increased, though not steadily, from 84.82 to 85.95 (an increase of 1.33%) yearly ad-

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FIGURE 1

Hospital Utilization By Year
Plan 4 - 1976 to 1984

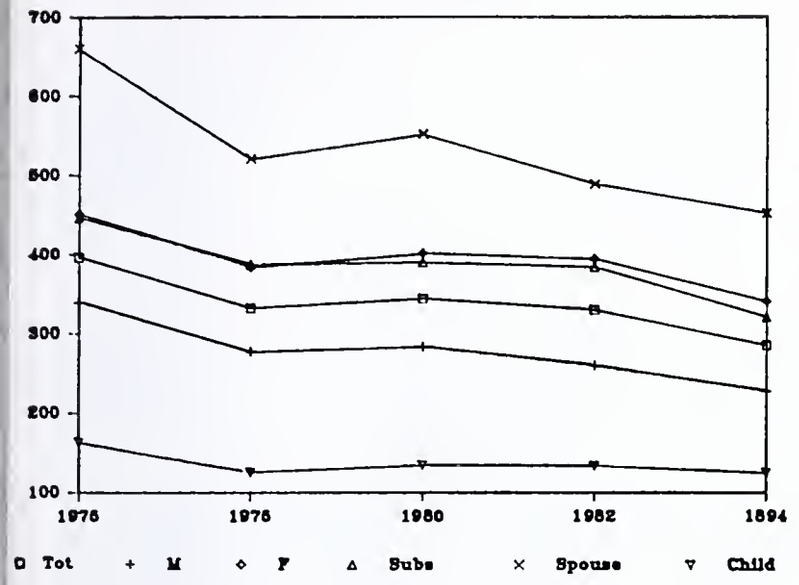


FIGURE 2

Hospital Utilization By Age
Totals - Plan 4 Members HMSA

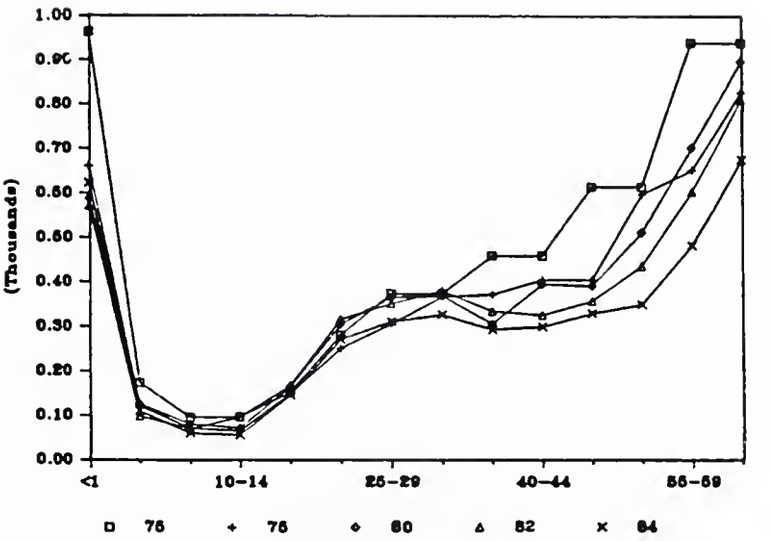


FIGURE 3

Hospitalization By Year
Plan 4 - 1976 to 1984

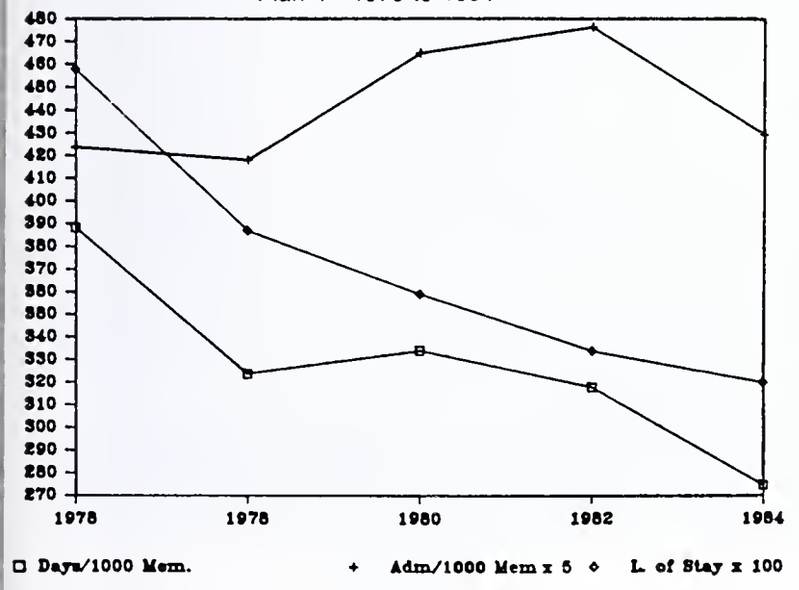
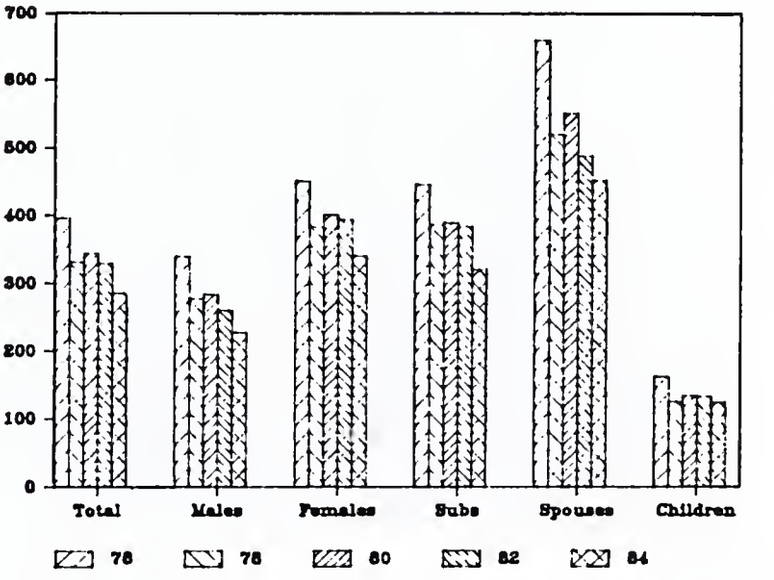


FIGURE 4

Hospital Utilization By Group
Plan 4 - 1976 to 1984



missions per 1,000 members. Lengths of stay, on the other hand, have steadily shrunk over the same period of time from 4.58 to 3.2 days per admission (a decrease of 30.13%). Children had, simultaneously, the highest increase in admissions and the highest drop in lengths of stay.

These results indicate that the drop in hospital utilization that took place over the last decade can be directly attributed to shorter lengths of stay, and not to fewer admissions.

A breakdown of the data by groups revealed that utilization rates of all groups: Male, females, subscribers, dependents, spouses and children, have decreased significantly, and that for each group, these rates were higher in 1980 than 1978 (Figure 4).

An additional breakdown by sex and relationship indicated that, contrary to the general trend, utilization rates of female subscribers 15 to 19 years old have increased, though not steadily. This group constituted, however, only about one-half of 1% of the population during the time period under study.

Additional Findings

Several other conclusions can be drawn from this analysis:

1) In general, utilization increased with age, with the exception of infants (members less than 1 year old) who had a high utilization rate. The lowest utilization rate was encountered with children 5 to 14 years old (Figure 2). ►

(Continued)

2) The lowest utilization rate was encountered with dependent children (under 20 years old, Figure 4) notwithstanding the fact that this group comprises the subgroup with the highest utilization rate, namely infants. The group with the highest utilization rate was the spouse group.
3) Males had lower utilization rates than females (Figure 4). Except for infants, utilization rates of males increased substantially (though not steadily) with age. In the case of females, there was an additional peak between the ages of 20 and 39. The lowest utilization rates in both males and females occurred between the ages of 5 and 14.
4) Overall, subscribers had lower utilization rates than dependents. Whereas utilization increased steadily and significantly with age in the case of subscribers, the trend is less apparent with dependents, with an additional peak observed between the ages of 20 and 39. Apart from old age, dependents between the ages of 20 and 39 were the highest users of hospital services. Presumably, the similarity between this distribution and that of females presented above is a reflection of the high proportion of females (69%) among dependents in this age group.
5) Male dependents had lower utilization rates than female dependents. Also, male subscribers had lower utilization rates than male dependents, and female subscribers had lower utilization rates than female dependents. These latter findings suggest that utilization rates are as much a factor of relationship than gender.
6) In general, the category with the lowest utilization rates was children between ages 5 and 14. Categories with the highest utilization rates were infants, the elderly, and female dependents over age 14, expecially pregnant ones.

TABLE 2

Disease Categories with Steadily Decreasing Utilization Rates

Group	Disease	Utilization Rate 1976	1984	Percent Change
Total	Genitourinary System	54.46	22.11	-59.40
	Respiratory System	23.37	11.34	-51.27
	Digestive System	52.40	31.38	-40.11
Males	Genitourinary System	25.55	10.97	-57.06
	Circulatory System	68.93	38.17	-44.62
	Digestive System	56.56	33.86	-40.13
Females	Endocrine, Nutritional and Diseases and Immunity Disorders	7.68	5.70	-25.78
Subscribers	Genitourinary System	61.53	27.39	-55.49
	Respiratory System	22.84	11.71	-48.73
	Digestive System	66.43	38.13	-42.60
Dependents	Genitourinary System	47.62	15.89	-66.63
	Circulatory System	29.35	15.30	-47.87
	Digestive System	38.82	23.43	-39.64

Analysis by Diagnosis

Table 2 presents, for various groups, the disease categories (based on ICD-9-CM) with the largest steady decrease in utilization rates. The accompanying data indicate that "Diseases of the Genitourinary System" has experienced the largest overall drop in hospital utilization.

In Table 3, the disease categories with the largest steady increase in utilization rates are presented. The accompanying data indicate that "Certain Conditions Originating in the Perinatal Period" had the largest overall increase in utilization.

TABLE 3

Disease Categories with Steadily Increasing Utilization Rates

Group	Disease	Utilization Rate 1976	1984	Percent Change
Total	Certain Conditions originating in the Perinatal Period	2.90	6.47	123.10
	Infectious & Parasitic	2.82	4.52	60.28
Males	None			
Females	Complications of the Pregnancy, Childbirth and the Puerperium	91.54	114.79	25.40
Subscribers	Complications of the Pregnancy	30.49	52.67	72.75
Dependents	Certain Conditions Originating in the Perinatal Period	5.71	14.04	145.88
	Infectious & Parasitic	2.30	4.44	93.04

Table 4 presents, for various groups, disease categories with the lowest utilization rates. Among these, "Diseases of the Blood and Blood-Forming Organs" is clearly the category with the lowest rate.

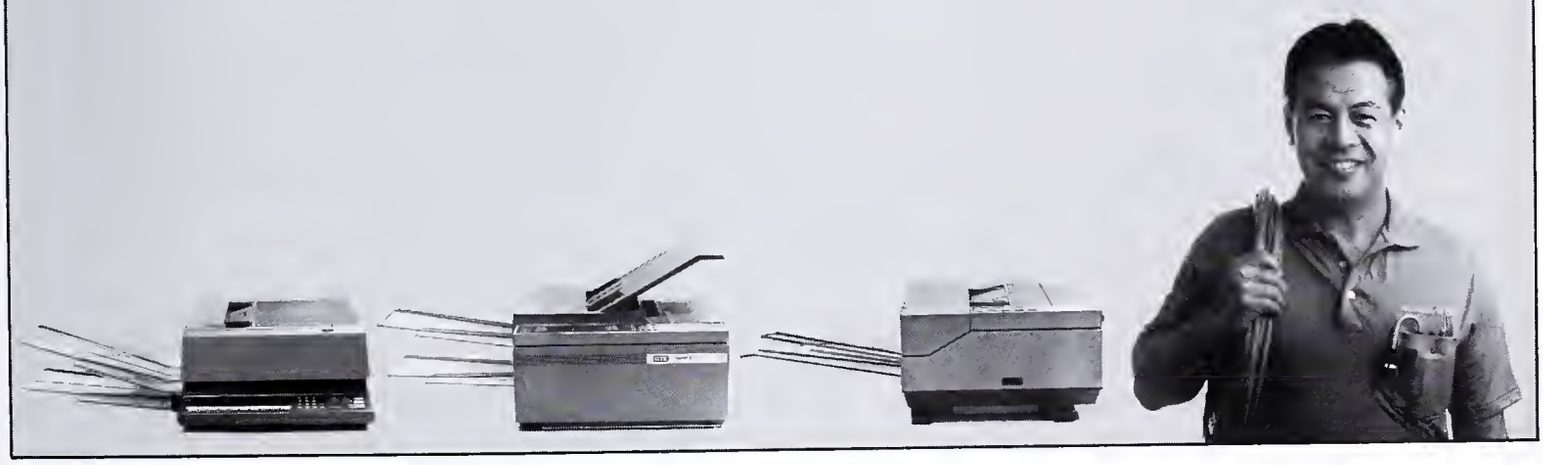
TABLE 4

Disease Categories with Lowest Utilization Rates

Group	Disease	Mean Utilization Rate
Total	Blood & Blood-Forming Organs	1.39
	Congenital Anomalies	3.72
Males	Blood & Blood-Forming Organs	1.41
Females	Blood & Blood-Forming Organs	1.37
Subscribers	Blood & Blood-Forming Organs	1.38
Dependents	Blood & Blood-Forming Organs	1.40

In Table 5, disease categories with the highest utilization rates are presented. Here, "Complications of the Pregnancy, Childbirth, and the Puerperium" ranked first. The observed mean rate of 102.87 for this category is the single highest rate for any disease category in any group. ►

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(Continued)

TABLE 5

Disease Categories with Highest Utilization Rates

Group	Disease	Mean Utilization Rate
Total	Complications of the Pregnancy, Childbirth & the Puerperium	52.45
	Neoplasms	42.22
	Digestive Systems	41.80
Males	Circulatory System	49.25
Females	Complications of the Pregnancy, Childbirth & the Puerperium	102.87
Subscribers	Circulatory System	56.77
	Digestive System	52.99
	Complications of the Pregnancy, Childbrith & the Puerperium	44.30

Discussion

The foregoing statistics suggest that hospital utilization trends in Hawaii are in synchronization with national trends.

In general, utilization increases with age; however, women in childbearing years and their infants emerge as the heaviest utilizers. Using sex as the independent variable, females show the highest utilization, also in line with the national trend.[3] It should be kept in mind, however, that these data are truncated at age 65; utilization patterns of senior citizens have not been investigated in this study. Gender is another important factor and indicates that spouses are the heaviest utilizers.

Unlike in the rest of the nation, where the drop in utilization is attributable to a drop in both admission and average length of stay,[2,4] the drop in Hawaii is attributed to the latter only, whereas the former has, in fact, been increasing.

A comparison between the aggregate disease utilization rates for the five data periods in Hawaii and the 1984 national figures[3] revealed other similarities. Whereas the category of "Complications of Pregnancy, Childbirth and the Puerperium" ranked highest in Hawaii, "Females with Deliveries" ranked third-highest nationally. "Diseases of the Digestive System" ranked second both in Hawaii and nationally. "Diseases of the Circulatory System," the highest-ranking category for Hawaii males, also ranked highest in the total national population.

Summary and Conclusion

Hospital utilization trends in Hawaii are similar to national trends. Rises and drops in utilization indices follow national patterns. A breakdown of the data by age, sex, relationship and disease category also indicates similarities with national trends.

The strongest decline in hospital utilization was found in the two age groups that exhibited the highest overall utilization rates: Infants and people aged 55 to 64.

In other related findings, males had lower utilization rates than females, and subscribers had lower rates than dependents. Male dependents had lower utilization rates than female dependents. Male subscribers had lower utilization rates than male dependents, and female subscribers had lower rates than female dependents.

When broken down by disease category, "Complications of Pregnancy, Childbirth and the Puerperium" was singled out as the category accounting for the highest utilization rate. The disease category with the lowest rate was "Blood and Blood-Forming Organs." ■

ACKNOWLEDGMENTS

The author is grateful to Cliff K. Cisco, Vice President, Alternate Delivery Systems, HMSA, for his comments and suggestions on this article.

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Contraindication: Axid is contraindicated in patients with known hypersensitivity to the drug and should be used with caution in patients with hypersensitivity to other H_2-receptor antagonists.

Precautions: *General* — 1. Symptomatic response to nizatidine therapy does not preclude the presence of gastric malignancy.

2. Because nizatidine is excreted primarily by the kidney, dosage should be reduced in patients with moderate to severe renal insufficiency.

3. Pharmacokinetic studies in patients with hepatorenal syndrome have not been done. Part of the dose of nizatidine is metabolized in the liver. In patients with normal renal function and uncomplicated hepatic dysfunction, the disposition of nizatidine is similar to that in normal subjects.

Laboratory Tests — False-positive tests for urobilinogen with Multistix® may occur during therapy with nizatidine.

Drug Interactions — No interactions have been observed between Axid and theophylline, chlordiazepoxide, lorazepam, lidocaine, phenytoin, and warfarin. Axid does not inhibit the cytochrome P-450-linked drug-metabolizing enzyme system; therefore, drug interactions mediated by inhibition of hepatic metabolism are not expected to occur. In patients given very high doses (3,900 mg) of aspirin daily, increases in serum salicylate levels were seen when nizatidine, 150 mg b.i.d., was administered concurrently.

Carcinogenesis, Mutagenesis, Impairment of Fertility — A two-year oral carcinogenicity study in rats with doses as high as 500 mg/kg/day (about 80 times the recommended daily therapeutic dose) showed no evidence of a carcinogenic effect. There was a dose-related increase in the density of enterochromaffin-like (ECL) cells in the gastric oxyntic mucosa. In a two-year study in mice, there was no evidence of a carcinogenic effect in male mice; although hyperplastic nodules of the liver were increased in the high-dose males as compared with placebo. Female mice given the high dose of Axid (2,000 mg/kg/day, about 330 times the human dose) showed marginally statistically significant increases in hepatic carcinoma and hepatic nodular hyperplasia with no numerical increase seen in any of the other dose groups. The rate of hepatic carcinoma in the high-dose animals was within the historical control limits seen for the strain of mice used. The female mice were given a dose larger than the maximum tolerated dose, as indicated by excessive (30%) weight decrement as compared with concurrent controls and evidence of mild liver injury (transaminase elevations). The occurrence of a marginal finding at high dose only in animals given an excessive and somewhat hepatotoxic dose, with no evidence of a carcinogenic effect in rats, male mice, and female mice (given up to 360 mg/kg/day, about 60 times the human dose), and a negative mutagenicity battery are not considered evidence of a carcinogenic potential for Axid.

Axid was not mutagenic in a battery of tests performed to evaluate its potential genetic toxicity, including bacterial mutation tests, unscheduled DNA synthesis, sister chromatid exchange, mouse lymphoma assay, chromosome aberration tests, and a micronucleus test.

In a two-generation, perinatal and postnatal fertility study in rats, doses of nizatidine up to 650 mg/kg/day produced no adverse effects on the reproductive performance of parental animals or their progeny.

Pregnancy — Teratogenic Effects — Pregnancy Category C — Oral reproduction studies in rats at doses up to 300 times the human dose and in Dutch Belted rabbits at doses up to 55 times the human dose revealed no evidence of impaired fertility or teratogenic effect; but, at a dose equivalent to 300 times the human dose, treated rabbits had abortions, decreased number of live fetuses, and depressed fetal weights. On intravenous administration to pregnant New Zealand White rabbits, nizatidine at 20 mg/kg produced cardiac enlargement, coarctation of the aortic arch, and cutaneous edema in one fetus and at 50 mg/kg it produced ventricular anomaly, distended abdomen, spina bifida, hydrocephaly, and enlarged heart in one fetus. There are, however, no adequate and well-controlled studies in pregnant women. It is also not known whether nizatidine can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Nizatidine should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers — Studies conducted in lactating women have shown that <0.1% of the administered oral dose of nizatidine is secreted in human milk in proportion to plasma concentrations. Caution should be exercised when administering nizatidine to a nursing mother.

Pediatric Use — Safety and effectiveness in children have not been established.

Use in Elderly Patients — Ulcer healing rates in elderly patients are similar to those in younger age groups. The incidence rates of adverse events and laboratory test abnormalities are also similar to those seen in other age groups. Age alone may not be an important factor in the disposition of nizatidine. Elderly patients may have reduced renal function.

Adverse Reactions: Clinical trials of nizatidine included almost 5,000 patients given nizatidine in studies of varying durations. Domestic placebo-controlled trials included over 1,900 patients given nizatidine and over 1,300 given placebo. Among reported adverse events in the domestic placebo-controlled trials, sweating (1% vs 0.2%), urticaria (0.5% vs < 0.01%), and somnolence (2.4% vs 1.3%) were significantly more common in the nizatidine group. A variety of less common events was also reported, it was not possible to determine whether these were caused by nizatidine.

Hepatic — Hepatocellular injury, evidenced by elevated liver enzyme tests (SGOT [AST], SGPT [ALT], or alkaline phosphatase), occurred in some patients and was possibly or probably related to nizatidine. In some cases, there was marked elevation of SGOT, SGPT enzymes (greater than 500 IU/L) and, in a single instance, SGPT was greater than 2,000 IU/L. The overall rate of occurrences of elevated liver enzymes and elevations to three times the upper limit of normal, however, did not significantly differ from the rate of liver enzyme abnormalities in placebo-treated patients. All abnormalities were reversible after discontinuation of Axid.

Cardiovascular — In clinical pharmacology studies, short episodes of asymptomatic ventricular tachycardia occurred in two individuals administered Axid and in three untreated subjects.

CNS — Rare cases of reversible mental confusion have been reported.

Endocrine — Clinical pharmacology studies and controlled clinical trials showed no evidence of antiandrogenic activity due to Axid. Impotence and decreased libido were reported with equal frequency by patients who received Axid and by those given placebo. Rare reports of gynecomastia occurred.

Hematologic — Fatal thrombocytopenia was reported in a patient who was treated with Axid and another H_2-receptor antagonist. On previous occasions, this patient had experienced thrombocytopenia while taking other drugs. Rare cases of thrombocytopenic purpura have been reported.

Integumental — Sweating and urticaria were reported significantly more frequently in nizatidine- than in placebo-treated patients. Rash and exfoliative dermatitis were also reported.

Hypersensitivity — As with other H_2-receptor antagonists, rare cases of anaphylaxis following administration of nizatidine have been reported. Because cross-sensitivity in this class of compounds has been observed, H_2-receptor antagonists should not be administered to individuals with a history of previous hypersensitivity to these agents. Rare episodes of hypersensitivity reactions (eg, bronchospasm, laryngeal edema, rash, and eosinophilia) have been reported.

Other — Hyperuricemia unassociated with gout or nephrolithiasis was reported. Eosinophilia, fever, and nausea related to nizatidine administration have been reported.

Overdosage: Overdoses of Axid have been reported rarely. The following is provided to serve as a guide should such an overdose be encountered.

Signs and Symptoms — There is little clinical experience with overdosage of Axid in humans. Test animals that received large doses of nizatidine have exhibited cholinergic-type effects, including lacrimation, salivation, emesis, miosis, and diarrhea. Single oral doses of 800 mg/kg in dogs and of 1,200 mg/kg in monkeys were not lethal. Intravenous median lethal doses in the rat and mouse were 301 mg/kg and 232 mg/kg respectively.

Treatment — To obtain up-to-date information about the treatment of overdose, a good resource is your certified regional Poison Control Center. Telephone numbers of certified poison control centers are listed in the *Physicians' Desk Reference (PDR)*. In managing overdosage, consider the possibility of multiple drug overdoses, interaction among drugs, and unusual drug kinetics in your patient.

If overdosage occurs, use of activated charcoal, emesis, or lavage should be considered along with clinical monitoring and supportive therapy. Renal dialysis for four to six hours increased plasma clearance.

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The polymerase chain reaction and its applications

Andrea Milbourne, BA*
Scott Nakamura**
Jeffrey M. Nakamura, MD***

The advent of recombinant DNA technology has brought us many new techniques for the detection of genetic defects. With these methods it has become possible to do prenatal screening of the DNA of fetuses and to detect genetic defects that would lead to congenital disease. The biggest problem facing researchers has been the limited sensitivity of the techniques of molecular biology especially in detecting small changes in the DNA.

The human genome consists of approximately 3 billion base pairs; the detection of a change in one base pair is virtually impossible. Many genetic diseases however, are caused by a change in one base pair. Sickle-cell anemia and the thalassemias, for example, occur because a crucial base pair has been altered[1].

While molecular biology techniques, such as Restriction Fragment Length Polymorphism (RFLP) analysis and Southern Blotting, are able to detect many of the pathologically important genetic changes, oftentimes the detection is tedious and too time-consuming, or the available tissue material is small. Some of these problems have now been solved with the development of a gene-amplification technique[1].

Saiki and co-workers developed the technique, now commonly referred to as Polymerase Chain Reaction or PCR, as an assay for the detection of sickle-cell anemia in fetuses[1]. The new method increased the sensitivity of detection and reduced the time needed for evaluation of the results.

The PCR utilized a pair of gene-specific primers, which are complementary to the plus and minus strand of the gene of interest. It is important that these primers be very specific to the gene in question. Thus it is necessary to identify a unique sequence within the desired region. This assumes, of course, that the DNA sequence of the gene is known, so that a unique and highly conserved region can be identified. It is also of importance that the unique sequence be conserved, as it would be of little use if it were so unique that its occurrence is restricted to only one individual.

Ideally, the primer pair will enclose a sequence of between 100 and 200 base-pairs. Smaller sequences can get lost easily in the process of analyzing the results and larger sequences will take too long to be amplified[1].

The next step in the reaction is the synthesis of the primer pair. The minimum length of one primer is 14 nucleotides; this is the minimum number of nucleotides that will recognize a specific DNA sequence[2]. The maximum length of a primer is usually determined by the DNA sequencer, but it is commonly around 20 nucleotides.

The PCR itself proceeds as follows: First, the DNA sequence of interest is combined with the primer pair and sufficient quantities of the four nucleotides[3]. Then, the whole mixture is heated to 95°C in order to denature the DNA. This is followed by a period of cooling, to allow the primer pair to anneal to the gene sequence. The DNA polymerase is added and the amplification reaction is allowed to proceed (Table 1, Fig. 1). This sequence of events is repeated between 20 and 30 times (Fig. 2).

Mix DNA sequence of interest with buffer nucleotide mixture primer pair	
Denaturing	Incubate in 95° C waterbath for 7 minutes
Reannealing	Incubate in 37° C waterbath for 5 minutes
Add DNA polymerase	
Amplification	Incubate in 70° C waterbath for 5 minutes
End of first cycle	
Repeat for 20 cycles	

Table 1: Schematic overview of Polymerase Chain Reaction sequence. ►

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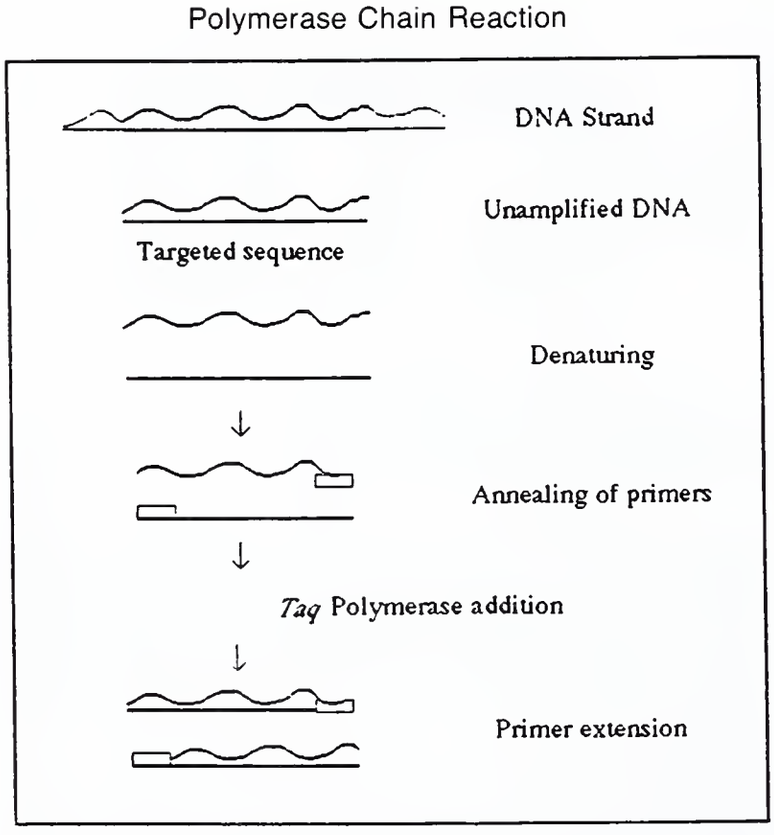


Figure 1: First cycle of the Polymerase Chain Reaction with denaturing of targeted DNA sequence, annealation of primers, and addition of Taq polymerase, with primer extension.

Initially it was necessary to add DNA polymerase after each denaturing step since the Klenow fragment of *E.coli* was used. This enzyme was denatured by the high temperatures of the denaturing step. More recently, however, a heat-stable DNA polymerase from the extreme thermophile, *Thermophilus aquaticus,* has been used[4], thus eliminating the necessity to add further enzyme and saving time and resources.

Since Saiki and his co-workers first described this technique in 1985, many more applications of its use have been developed. PCR has been used to screen the DNA of white blood cells from peripheral blood samples for HIV-I[5]. It had been very difficult to detect small quantities of virus in DNA from blood samples, especially in the early stages of infection when the virus had infected only a small number of T-lymphocytes. Since HIV poses a severe public health risk, it is important to detect the virus as early after infection as possible.

In addition to screening for HIV, the PCR can be used to detect a number of other viral pathogens that integrate into DNA. It has been used to screen for hemophilia-A in fetuses[6]. And, as the DNA sequences of more genes become known, it will probably be used to screen for many more genetic defects.

Thus, it can be seen that PCR has a lot of potential uses, not only as a tool for prenatal screening, but also in the detection of viral infections. In addition to its clinical applications, the polymerase chain reaction has many applications as a tool in basic science, since it can amplify regions of DNA for cloning and for restriction fragment length comparisons[7,8].

The impact of this innovative technique will be felt throughout medicine and the biological sciences. Since the reaction has been automated, its application will no doubt become even more widespread. ■

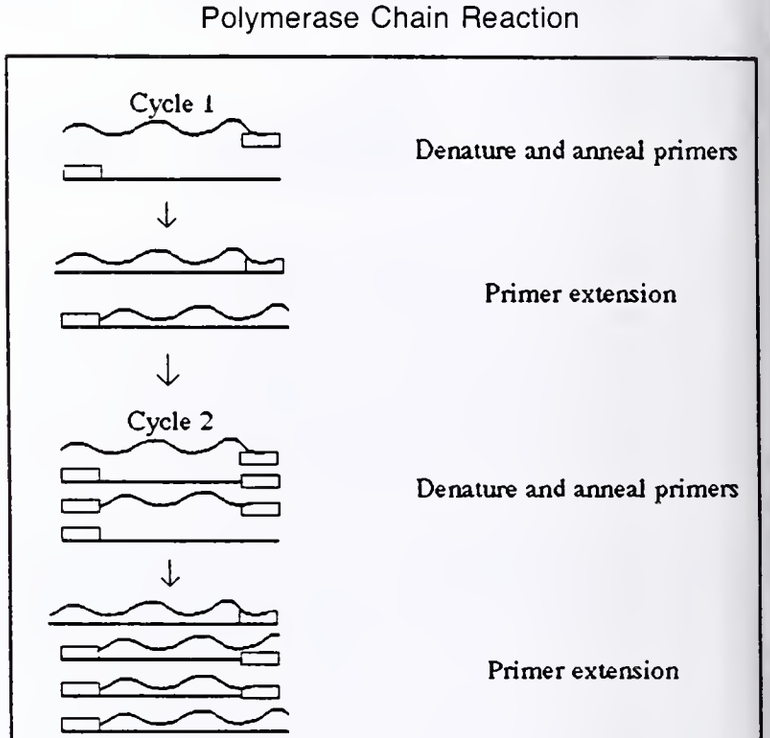


Figure 2: Flow diagram of Polymerase Chain Reaction events.

ACKNOWLEDGEMENT

The authors wish to acknowledge funding from the Straub Foundation and Kuakini Medical Center.

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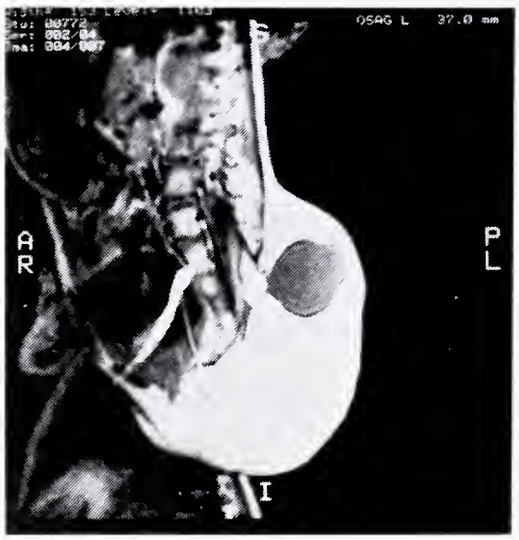
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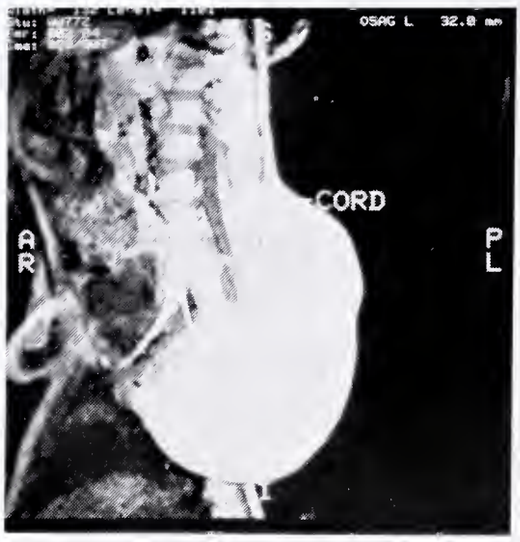
Scan Area: MRI of Lumbar Spine

Clinical History: Three year old female with meningomyelocele









These images were produced by MRI Center of the Pacific using their 1.5 Tesla GE Scanner.

Radiologic Diagnosis: The films above, in the axial and sagittal planes, demonstrate a meningomyelocele with tethered cord. There are both subcutaneous and intraspinal lipomas. A small cystic collection is evident within the tethered cord.

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Cauliflower growths in ulcers of leprosy — A question of malignancy

Douglas Duvauchelle, MD*
Norman Goldstein, MD**

Case Report

The patient was a 66-year old married Hawaiian man, a resident of Kalaupapa, and a victim of lepromatous Hansen's Disease with multiple deformities including bilateral below-the-knee amputations. He also suffered from chronic renal insufficiency and chronic anemia secondary to his renal problem. He was seen on September 3, 1987 with the complaint of a worsening chronic ulcer over the tibial tubercle of the right stump. The ulcer was thought to be due to an ill-fitting prosthesis. He also had facial deformities and the absence of digits on both hands.

There was a 10 cm ulcerating, fungating, cauliflower-like lesion over the anterior aspect of the tibial tubercle of his right lower extremity that had a pinkish appearance and a foul odor. The lesion was fixed to underlying structures and appeared to be involving the underlying bone. There were firm, nontender, 1-2 cm lymph nodes in the right groin with no other lymphadenopathy peripherally.

The ulcer was found to be infected with Klebsiella, Proteus, and Pseudomonas and was treated locally with Betadine washes.

X-rays of the affected extremity were taken to rule out osteomyelitis. The films showed generalized demineralization and a periosteal reaction of the proximal and medial aspect of the right tibia, but no definite evidence of osteomyelitis.

Since a tumor was suspected with possible metastasis to the right groin, a biopsy of the lesion was done on October 19, 1987, which revealed a well-differentiated squamous cell carcinoma of the skin. On November 2, a regional lymph node dissection of the right lower extremity was done to assess for metastasis. The pathological specimens revealed reactive hyperplasia with foreign body reaction, but no evidence of metastatic carcinoma.

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Discussion

It is known that in the patient with Hansen's Disease, ulcers may appear in both type 1 (cellular hypersensitivity) and type 2 (humoral hypersensitivity) reactions.

We know that an integral part of the disease is the involvement of the peripheral nerves. However, it should be stressed that permanent nerve damage is not an inevitable sequel. Measures to prevent or reduce the reactive phases can minimize the amount of nerve damage. This aspect of management cannot be overstressed. Nerve damage is preventable! Nevertheless, primary nerve damage leads to anesthesia, dryness of the skin and paralysis. These complications predispose to secondary complications, of which plantar ulceration is the most common. This is probably the result of repeated trauma, pressure necrosis, or unrecognized blister formation due to poorly fitting shoes.

Ulceration is damaging because it permits secondary infection. There have been reports of malignancy arising from these sites of chronic ulceration.

Malignancy in Trophic Ulcers

Kumar and Kant[2] postulated that the probable cause of malignant transformation is due to the constant irritation of an ulcer site, i.e., a patient continues to walk on an ulcerated foot without feeling or pain. Also implicated by other authors as possible causes of malignant transformation are chronic infection and chronic osteomyelitis of the underlying bone.

Reidel[4] suggested that squamous cell carcinoma arises at the ulcer or scar site of patients with Hansen's Disease more frequently than he once thought, recanting a statement in 1964 in which he said that "carcinoma arising out of plantar ulcers seems extremely uncommon." He based his new opinion on the occurence of four new cases of malignancy arising in the ulcers of patients in a two year period at a hospital and leprosy sanitarium in India.

Carcinoma developing in trophic ulcers of such patients has been reported sporadically. An article by Ramadan[3] cited several references, starting with Aird in 1954, who reported three such cases. These tumors arising in the plantar surfaces of the foot were given the name ►

Epithelioma cuniculatum, which is also known as verrucous carcinoma. Since then, other cases involving carcinoma transformation have been cited: Job and Reidel (1964), four cases; Shah and Shah (1965), one case; Thompson (1965), three cases; Reidel (1966), four cases; Thorne (1972), one case; Browenstein and Shapiro (1976), one case; Sheehafer et al. (1979), one case; Kumar and Kant (1984), one case; Ramadan et al. (1986), two cases.

Typically, these cases present themselves as a male patient with Hansen's Disease in his fifth or sixth decade of life, with a history of a chronic ulcer that may have been in existence for several years. The patient relates that the ulcer appears to have been growing in size recently, with poor response to adequate treatment. Physical exam usually reveals a fungating, foul-smelling, cauliflower growth of pinkish-reddish, unhealthy, granulation tissue. Occasionally, there is regional lymph node enlargement. In many cases the ulcer is secondarily infected.

Malignant transformation of ulcers in Hansen's Disease patients is still considered a rare occurrence. However, the practicing physician should be aware of the possibility and not overlook a malignancy.

Pertinent to the discussion is an article by Swamy et al. [5] which involves a 10-year study of cauliflower growths arising in trophic ulcers. Of the 75 cases seen at the Central Leprosy Teaching and Research Institute (CLTRI) in South India, malignant change was observed in only four cases. By contrast, Srinivasan and Desikan (1971) found in examined cauliflower growths that three cases out the 13 proved to be low grade carcinoma by histology[2].

Like all patients who developed carcinoma, these patients presented with a similar story. In the study by Swamy et al.[5], there was anesthesia of the parts in all the cases. As stated above, four cases showed low grade malignancy, but the remaining 71 cases exhibited pseudoepitheliamatous hyperplasia. Grossly, the lesions were all similar in appearance, ranging in size from 5 to 20cm across. The microscopic histology of pseudoepitheliomatous hyperplasia demonstrates hyperkeratosis and parakeratosis. There was hyperplasia of the epidermis that extended down into the dermis as fingerlike projections. The polarity of the cells and the basement membrane were intact. There were no abnormal mitotic changes. Inflamatory cells were seen in the dermis consisting mainly of lymphocytes and plasma cells[5].

In the four malignant cases, microscopic examination revealed cellular atypia of malignancy with increased mitosis, cellular pleomorphism and loss of polarity[5].

In the case of malignant ulcers, amputation seems to be the best method of treatment. In pseudoepitheliomatous hyperplasia, wide excision, when feasible, had fair results. Other cases were best treated by amputation. Most of the lesions appeared on the foot. A rundown of the recurrence rate following different surgical procedures showed 39% recurrence for excision alone, 20% for wide excision, 7% for Syme's amputation, and none in below the knee amputation[5].

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Summary

The take-home message is that cauliflower growths arising in trophic ulcers of Hansen's Disease patients are not necessarily malignant. These types of growths can also be seen as pseudoepithelioma, chronic granulomas, and pseudoepitheliomatous hyperplasia[2]. A biopsy should always be taken to rule out the possibility of a malignancy, however. Should the diagnosis be pseudoepitheliomatous hyperplasia, a less aggressive mode of therapy may be tried at first, especially if an amputation will markedly alter the patient's quality of life. Nevertheless, for pseudoepitheliomatous hyperplasia, wide excision is the treatment of choice where feasible, depending on size, extent and involvement of deeper structures. ■

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. . . well done, oh student!

Presentation of Kaposi's Sarcoma in the Acquired Immune Deficiency Syndrome

Linda Ann S.H. Tom, UHSM IV*

Since the first reports of unusual opportunistic infections and Kaposi's Sarcoma (KS) in homosexual men in New York and California, attention has been focused on a new edpidemic: The Acquired Immunodeficiency Syndrome (AIDS). One manifestation of this disease is Kaposi's Sarcoma. Usually a rare tumor, it occurs with a high incidence in patients with AIDS. In this paper Kaposi's Sarcoma as it appears in AIDS will be examined.

Kaposi's Sarcoma in Non-AIDS Patients

Kaposi's Sarcoma was first described in 1872 by a Hungarian physician, Maricz Kaposi. These were cutaneous tumors seen in elderly men of primarily Mediterranean or Jewish descent[3]. In North America and Europe the incidence of KS was 0.02 to 0.06/100,000. It presented most commonly as localized macules, papules, nodules or plaques of the lower extremities, and it rarely involved viscera. The course was generally indolent, with survival of up to 8 to 13 years after diagnosis. This form of KS is known as classical KS (CKS)[5].

In the 1950s a high incidence of KS was documented in areas of equatorial Africa. Patients were black Africans, ages 25 to 45 years, who had nodular lesions. Also a more aggressive form with local invasion of subcutaneous tissues and bone, and a generalized lymphadenopathic form with relatively few skin lesions was seen. These forms were seen in young black children ages 2 to 15; they have higher mortality rates and a 4- to 5-year survival. KS accounted for about 9% of the cancers in this region[1,5]. As with CKS, the African forms were not associated with any significant immune deficiency[8].

More recently, in the 1970s, it was noted that patients with exogenous immunosuppression had an increased incidence of KS. Patients in this group include those receiving immunosuppressive therapy and corticosteroids, especially renal transplant patients. These patients usually had a more aggressive and extensive disease, similar to that seen in AIDS patients. In addition, there was a high incidence of associated opportunistic infections in this group. However, when immunosuppressive therapy was discontinued, the KS in renal transplant patients often regressed[1,5,9].

Kaposi's Sarcoma in AIDS Patients (Epidemic KS)

Kaposi's Sarcoma is the initial manifestation in 30% of patients with AIDS and is considered one of the diagnostic signs[7]. The presentation of KS in AIDS patients, known as Epidemic Kaposi's Sarcoma (EKS) is diverse, ►

*Under the preceptor in dermatology Norman Goldstein, MD

often multifocal and generalized. It is often more aggressive, with rapid progression; lymph node and visceral involvement are not uncommon. Most patients are homosexual/bisexual with a mean age of 35 (range 20 to 60)[3,7].

Skin lesions are the most frequent initial presentation and can be widespread. Lesions can be single or multiple and range from faint pink-red to dark purple macules, papules or nodules, and even on mucous membranes. These lesions do not blanch when pressure is applied; they are usually discrete, oval to circular. However, in rapidly progressing disease they can coalesce to form plaques. Rapidly growing lesions are often surrounded by areas of yellow-brown ecchymosis and are commonly seen on the medial aspect of the thigh. Unlike CKS, which is usually confined to the lower extremities, lesions in EKS are commonly seen on the head, neck, oral cavity, trunk and arms. In EKS, leg lesions are not as common. The tip of the nose is a unique and relatively common place for lesions to appear in EKS. The mucous membranes, especially the hard palate, can be involved and are associated with an increased risk of ulceration[8,9]. Early lesions in EKS are painless, but in advanced disease pain can be prominent, especially with leg and foot lesions. Disfigurement and severe edema can also occur)[9].

Lymph nodes in one series were involved in 47% of cases. Nodal involvement can be present even when skin lesions are not prominent[7].

Visceral involvement is also not uncommon in EKS. The tumor has been found in liver, spleen, GI tract, oropharynx, conjunctiva, brain, testes, lungs, pancreas, aorta and heart. GI tract lesions are especially common, occurring in up to 50% of patients with skin lesions. GI lesions can also be present in the absence of skin involvement. Although KS is a vascular tumor, GI bleeding is rare, probably due to the fact that most GI lesions are submucosal[3]. Most visceral involvement is asymptomatic and death as a direct affect of organ lesions is rare. Patients with EKS die mostly of severe opportunistic infections and from wasting syndromes[9].

Histopathology and Diagnosis

Kaposi's Sarcoma in AIDS and non-AIDS patients is histologically indistinguishable one from the other. It is a vascular tumor characterized by the proliferation of abnormal endothelial cells with spindle-shaped cells and extravasated red blood cells. It is thought that the cells of origin of KS are endothelial, most likely lymphatic endothelial cells[4,9]. In generalized disease, lesions are thought to be multicentric and not metastatic[4].

Diagnosis in early disease can be difficult because of the broad spectrum of the lesions. They can be confused with bruises, intracorneal hemorrhages, nevi, insect bites, secondary syphillis, lichen planus and dermatofibromas. Lesions in dark-skinned patients are often hyperpigmented[2,3]. Therefore, in high risk groups, any new suspicious skin lesion should be biopsied[9]. Pulmonary KS can also be confused with *Pneumocystis carinii* pneumonia on xray[9].

Epidemiology and Pathogenesis

While EKS can be seen in any race, not all AIDS patients are at equal risk for developing KS. Higher incidence occurs in white homosexual men as compared with black homosexual men and in i.v. drug users. KS in AIDS patients other than homosexuals is rare[5,7,9].

EKS patients seem to share several characteristics. Commonly there is a high use of "recreational" drugs, especially amylnitrate, which is a sexual stimulant used by many homosexual men. These patients also report a high degree of sexual activity with multiple partners and have an increased rate of Sexually Transmitted Diseases[6].

Cytomegalic Virus (CMV) infections are present in almost all patients and part of the CMV genome has been found in tumor cells (CMV infections are also seen in renal transplant patients). One hypothesis is that failure of T-cells to destroy virally transformed cells may allow the expression of oncogenes in patients with AIDS and with other immunocompromised states[3].

A genetic predisposition is suggested as a result of the high incidence of HLA DR5 in EKS and CKS. The etiology of KS is not known, but HIV is not considered to be the cause. HIV may account for the different presentations manifest in EKS[5,7].

Staging and Prognosis

The classification system used previously was the Taylor classification published in 1971 (Table 1), which describes the spectrum of disease in Africa. However it did not include aspects seen in EKS[4]. In 1983, a new classification by Krigel et al. was published, which recognized four clinically distinct forms (Table 2). Stage I: Classical KS in elderly men; Stage II: African KS, locally invasive; Stage III and IV: Disseminated KS seen in AIDS, renal transplant patients and African children[11,14]. This staging system also separated Stages III and IV by the presence or absence of systemic symptoms[4].

Although overall mortality still remains at 41%, several factors seem to affect prognosis in EKS[4]. In one study, good prognosis was attached to Stage I — 100% survival at 18 months; Stage IIIA and IVA had an 85% survival at 18 months. Prognosis was poor for IIIB and IVB, with survival of only 24% at 18 months. The presence of systemic symptoms significantly worsened prognosis[11].

The occurrence of prior or concurrent opportunistic infections decreased survival to less than 20% at two years, regardless of stage[11]. Other factors which worsen prognosis are an elevated ESR, decreased T_h/T_s ratio, absolute T_h less than 100 cells/mm^3, and GI or pulmonary involvement. Prognosis is slightly better with higher titres of antibodies to the HIV[9].

Treatment

Before the appearance of AIDS as an epidemic, most KS was indolent in nature and required minimal treatment. Treatment data at that time came chiefly from trials in Africa and the results were good using both radiotherapy and chemotherapy. However, treatment of EKS is largely experimental and not very encouraging[3,8].

TABLE 1.—Taylor classification of Kaposi's sarcoma[4]

Clinical type	Behavior	Age group (yrs)	Bone involvement	Lymphnode involvement	Predominant skin tumor
Nodular	Indolent	>25	Rare	Rare	Nodules, plaques
Florid	Locally aggressive	>25	Often	Rare	Fungating (exophytic)
Infiltrative	Locally aggressive	>25	Always	Rare	Diffuse infiltration
Lymphadenopathic	Disseminated aggressive	<25	Rare	Always	Nodules

TABLE 2.
Staging System of Kaposi's Sarcoma[1]

Stage I:	Cutaneous, locally indolent
Stage II:	Cutaneous, locally aggressive with or without regional lymph nodes
Stage III:	Generalized mucocutaneous and/or lymph node involvement
Stage IV:	Visceral
Subtypes	
A.	No systemic signs or symptoms
B.	Systemic signs: 10% weight loss or fever greater than 100°F orally unrelated to an identifiable source of infection lasting more than 2 weeks

*Generalized: more than upper or lower extremities alone; includes minimal G.I. disease defined as more than five lesions and greater than 2 can in combined diameters.

Both EKS and CKS are radiosensitive. Radiation is used for EKS mainly for palliation and for cosmetic reasons. The indications for palliation radiotherapy are large erosive oral lesions, painful lesions of the feet, obstructive lymphadenopathy, periorbital edema and ulcerating anorectal lesions[8,9].

Chemotherapy has been effective in CKS. However, the use of chemotherapy in EKS is controversial because it can further impair cellular immunity and increase the risk of opportunistic infections. Trials with single agents such as the vinca alkaloids: Vincristine and Vinblastine, and a podophylotoxin, VP-16, have shown variable results and mild-to-moderate toxicity[10]. However, response duration is short (about six months) and relapses are frequent. Combination therapy has also been tried but is associated with up to 50% incidence of opportunistic infections. Thus, the problem faced by clinicians is a relative chemosensitive tumor in a patient with an underlying immunodeficiency which treatment may worsen[5,8,9]. ►

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Immunotherapy has been tried in order to restore the immune system, which may stabilize or cause tumor regression[8]. Although several agents have been tried (alpha interferon, gamma interferon, cimetidine and interleukin-2), only alpha interferon was shown to be active in EKS. This may be due to its antitumor effect rather than an improvement in the immune system[5,9]. The problems with this type of therapy is that the AIDS virus may have damaged the T-cell line, making recovery limited; newly produced T-cells may be infected rapidly by the virus and with that stimulation, already infected cells may show an increase in viral replication[5,9].

No treatment of this tumor (EKS) has resulted in any reversal of the underlying immune defect[5]. Therefore, in hopes of decreasing viral replication, various trials with antiviral agents are in process[5,9].

Summary

Kaposi's Sarcoma in AIDS patients, although histologically identical to KS found in non-AIDS patients, does not present in the same way. Various treatment modalities have been tried, with some success. However, most patients with KS die of opportunistic infections and not directly due to KS. Prognosis for AIDS patients with KS is not encouraging, primarily because of the underlying immune system defect.■

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Changing Gears

For years I raced through life
Like most of us people do,
Pushing to please a wife,
And care for the children too.

And build my chosen work
To a point where comfort availed
By driving myself beserk
Treating every deformity that ailed.

I rarely paused to watch
The glory of setting sun,
Too busy carving a notch
In the stock of my surgical gun!

But one day I looked up
And most of my life was gone.
And there within "my cup"
Was little I'd care to own.

"It's never too late," they say
To change one's way of living;
And I resolved that day
To *receive* while I was giving.

And music returned to my heart.
I kept fresh flowers around
And sunsets became a part
Of the substance with which life was wound.

I began to think in verse
And see the poetry of life
Which took away the curse
And the "nose-to-the-grindstone" strife.

I dedicate the rest
Of my life to looking about —
To receiving all the best
Of the messages life sends out —

To flowers, crafts, and deeds
That make life rich and full
To watching shoots from seed
And feeling the texture of wool.

And to filling up the years
With beauty, love and verse,
And books and friends and peers
Who've learned how to run in "reverse."

And may I never return
to trudging through life unaware
Of the flower and the fern
And the beauty creation can share!

Robert S. Flowers, MD



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 - B. Grand Rounds, first and third Tuesdays, 12:30-2 p.m., Queen's University Tower, Room 618.
 - C. Endocrinology Grand Rounds, first Tuesday, 5:30-6:30 p.m., Queen's University Tower, Room 506.
 - D. UH-Queen's Conference, every Friday, 8-9 a.m., Queen's Medical Center, Mabel Smyth Auditorium.
 - E. Cardiology Grand Rounds, third Tuesday, 6:30-7:30 p.m., Queen's University Tower, Room 508.
 - F. Infectious Disease Grand Rounds, first and third Thursdays, 5 - 6 p.m., Queen's Nalani I Conference Room.
 - G. Dermatology Grand Rounds, second Wednesday, 7:30-9:30 a.m., Queen's Medical Center, Queen Emma Clinic.
 - H. Pulmonary Grand Rounds, fourth Monday, 12:30-1:30 p.m., Queen's Medical Center, Kamehameha Lounge.
 - I. Nuclear Medicine Grand Rounds, third Wednesday, 5-6:30 p.m., Straub Clinic & Hospital, Doctors' Dining Room.
 - J. Medical-Surgical GI Grand Rounds, third Friday, 12:45-1:45 p.m., Kuakini Hospital, PB4 Classroom.
 - K. Rehabilitation Hospital of the Pacific Grand Rounds, first and third Thursdays, 7:30 - 8:30 a.m., Rehabilitation Conference Room, first floor.
 - L. Neurology Grand Rounds, second Thursday, 12:30-1:30 p.m., Queen's Medical Center, Kam Auditorium.
 - M. Geriatric Medicine Journal Club, first and third Wednesdays, 5:30-7 p.m. or TBA, 9th Floor Lounge, HPM, Kuakini Medical Center.
 - N. Radiology Grand Rounds, every second Tuesday, 5:30-8 p.m., Queen's Medical Center, Radiology Classroom.
2. Department of Obstetrics and Gynecology
 - A. Grand Rounds, Wednesdays, 7:30-8:30 a.m., Kapiolani Medical Center for Women and Children, second-floor auditorium.

►

YOCON®
YOHIMBINE HCl

Description: Yohimbine is a 3a-15a-20B-17a-hydroxy Yohimbine-16a-carboxylic acid methyl ester. The alkaloid is found in Rubaceae and related trees. Also in Rauwolfia Serpentina (L) Benth. Yohimbine is an indolalkylamine alkaloid with chemical similarity to reserpine. It is a crystalline powder, odorless. Each compressed tablet contains (1/12 gr.) 5.4 mg of Yohimbine Hydrochloride.

Action: Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalmic centers and release of posterior pituitary hormone.

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it; however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

Indications: Yocon® is indicated as a sympathicolytic and mydriatic. It may have activity as an aphrodisiac.

Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.[1,2] Also dizziness, headache, skin flushing reported when used orally.[1,3]

Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.[1,3,4] 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to ½ tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.[3]

How Supplied: Oral tablets of Yocon® 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.

References:

1. A. Morales et al., New England Journal of Medicine: 1221. November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

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(Continued)

B. Tuesday Conference, Tuesdays, 1-2 p.m., Kapiolani Medical Center for Women and Children, second-floor auditorium.
C. UH Conference, Fridays, 2:30-3:30 p.m., Kapiolani Medical Center for Women and Children, second-floor auditorium.

3. Division of Orthopedics
 A. Fracture Conference, Mondays, 5-6 p.m., Queen's University Tower, Room 618.
 B. Shriners' Tuesday Conference, Tuesdays, 7:15-8:15 a.m., Shriners Children's Hospital, Auditorium.
4. Department of Pediatrics
 A. Grand Rounds, Thursdays, 8-9 a.m., Kapiolani Medical Center for Women and Children, second-floor auditorium.
 B. Monday Noon Conference, 12:45-1:45 p.m., Kapiolani Medical Center for Women and Children, second-floor auditorium.
 C. Pediatric Infectious Disease Conference, Thursdays, 12:30-1:30 p.m., Kapiolani Medical Center for Women and Children, third-floor conference room.
 D. Perinatal Grand Rounds, Fridays, 8:15-9:15 a.m., Kapiolani Medical Center for Women and Children, Conference Room B.
5. Department of Psychiatry
 A. Grand Rounds, Fridays, 8-9:30 a.m., Queen's University Tower, Room 618.
 B. Scientific Forum, Mondays, 12:30-2 p.m., Kapiolani Medical Center for Women and Children, Conference Room 626.
 C. Hawaii State Hospital Psychiatry Education Conference, third Wednesday, 10:30 a.m.-noon, Hawaii State Hospital, Goddard Conference Room.
6. Department of Surgery
 A. Grand Rounds, first, second, and third Saturdays, 7:30-9 a.m., rotating hospitals.
 B. Statistical M&M, last Saturday, 7:30-9 a.m., rotating hospitals.
 C. Journal Club, first and third Tuesdays, 6-8 p.m., Queen's University Tower, Rom 620.
 D. Medical-Surgical GI Grand Rounds, third Friday, 12:45-1:45 p.m., Kuakini Medical Center, PB4 Classroom.
 E. Pediatric Surgical Grand Rounds, first Friday, 12:45-1:45 p.m., Kapiolani Medical Center for Women and Children, Conference Room B.
 F. Basic Science Lecture, Wednesdays, 7:15-8:15 a.m., Queen's University Tower, Room 618.
7. Department of Pathology
 A. Neuropathology Conference, first Saturday, 8-9 a.m., St. Francis Hospital, Sullivan IV Classroom.
 B. Pathology Grand Rounds, bimonthly, 7:30-8:30 p.m., rotating locations.

For further information on any of these programs, please call the Continuing Medical Education office at 948-6949.

Castle Medical Center

1. CME Programs, first, second, and third Tuesdays, 12:30-1:30 p.m., Castle Medical Center's auditorium.
2. Windward Oncology Programs, fourth Tuesday, 12:30-1:30 p.m., Castle Medical Center's auditorium.

For further information, call Staff Development at 263-5186.

Chart Rehabilitation of Hawaii, Inc.

1. CME Programs, Thursdays, 8-9 a.m. Topics and visiting professorships to be announced.

For further information, or to be placed on the mailing list, contact Comprehensive Health and Active Rehabilitation Training (CHART) at 523-1674.

G.N. Wilcox Memorial Hospital

1. General Medical Staff Meeting, Quarterly in January, April, July, and October, 7:30 p.m., Hospital Conference Room.
2. Clinical Review, Mondays (occasional Friday), noon-2 p.m., Hospital Conference Room.
3. Journal Club, last Monday, bimonthly (January, March, etc.), Hospital Conference Room.

For further information, call Medical Staff Services, 245-1173.

Hawaii Medical Association

1. HMA Maternal and Perinatal Mortality Study Committee, on an on-call basis. 1360 S. Beretania St., 2nd Floor. (Call 536-7702 to confirm meeting schedule.)

Hawaii Ophthalmological Society

1. Monthly Dinner Meeting, third Thursday of each month (except July, August, and December), 6:30-9:30 p.m., The Pacific Club.

Hawaii Thoracic Society

1. To be announced — Visiting Professorship Program Statewide.
2. Sinclair Chest Club Quarterly Dinner Meetings, January, April, July, and October. Call Rosemary Respicio, BSN, at 537-5966 for dates and speakers.

Hilo Hospital

1. Radiology Conference, first Friday, 12:30-1:30 p.m., GC-1 Conference Room.
2. Tumor Conference, second Friday, 12:30-1:30 p.m., GC-1 Conference Room.
3. "Great Case" Conference/Clinical Pharmacology, third Friday, 12:30-1:30 p.m., GC-1 Conference Room.
4. Pathology Conference/Morbidity-Mortality Review, fourth Friday, 12:30-1:30 p.m., GC-1 Conference Room.
5. Visiting Professor/Network for Continuing Medical Education Tapes (ETV), Saturdays, 7-8 a.m., GC-1 Conference Room.

For further information, call Administration at 969-4382.

Kaiser Foundation Hospital

1. Obstetrics/Pathology Conference, first Monday, noon-1 p.m., Moanalua fourth-floor conference room.
2. Medicine Grand Rounds, Tuesdays, 8-9 a.m., Moanalua Auditorium.
3. Tumor Board, Tuesdays, noon-1 p.m., Moanalua Auditorium.
4. Pathology Conference, Fridays, 11 a.m.-12 noon, Moanalua Conference Room A.
5. Surgical Grand Rounds, Fridays, 8-9 a.m., Moanalua Auditorium.
6. Family Practice Grand Rounds, fourth Thursday, 7:45-9 a.m., Moanalua fourth-floor conference room.
7. Obstetrics/Perinatal Conference, last Tuesday, 8-9 a.m., Moanalua fourth-floor conference room.
8. Network for Continuing Medical Education (NCME) Videotape Program, Monday-Thursday, noon-2 p.m., Moanalua Conference Room C-D.

For further information, call CME Office at 834-9496 for topics.

Kona Hospital

1. Monthly CME Meeting, third Friday, 7:30-8:30 a.m., Hospital Conference Room.
2. Grand Rounds/Tumor Board, third Thursday, 7:30-8:30 a.m., Hospital Conference Room.
3. Visiting Professor Programs, (For further information, call 322-9311 ext. 29 or 55.)

Kuakini Medical Center

1. Visiting Professor Lectures (ongoing).
2. Guest Lectures (ongoing).
3. Neurology Conference, second Monday, 12:30-1:30 p.m., Resident's Conference Room.
4. Neuroradiology Conference, third Monday, 8-9 a.m., PB-4 Conference Room.
5. Nephrology Conference, third Monday, noon-1 p.m., Resident's Conference Room.
6. Department of Ophthalmology Meeting, first Tuesday, 12:30-1:30 p.m., Private Dining Room.

7. Internal Medicine Study Club, bimonthly second Tuesday, 6-7 p.m., PB-4 Conference Room.
8. Department of Medicine (M&M), fourth Tuesday, 1-2 p.m., Hale Pulama Mau Auditorium.
9. Endocrine Conference, first Wednesday, 12:30-1:30 p.m., Resident's Conference Room.
10. G.I. Conference, second Wednesday, 12:30-1:30 p.m., Resident's Conference Room.
11. Infectious Disease Conference, third Wednesday, 12:30-1:30 p.m., Resident's Conference Room.
12. Oncology Conference, Thursdays, 7:30-8:30 a.m., PB-5 Conference Room.
13. Hematology and Oncology Conference, first Thursday, 12:30-1:30 p.m., Resident's Conference Room.
14. Pulmonary Conference, second Thursday, 1-2 p.m., Resident's Conference Room.
15. Rheumatology Conference, third Thursday, 12:30-1:30 p.m., Resident's Conference Room.
16. Cardiology Conference, fourth Thursday, 12:30-1:30 p.m., Resident's Conference Room.
17. Surgical Conference, first Friday, 12:45-1:45 p.m., PB-5 Conference Room, (Note: Also fourth Friday, if there are five Fridays in a month.)
18. Nutrition Conference, second Friday, bimonthly 12:30-1:30 p.m., Private Dining Room.
19. Surgical Trauma Conference, second Friday, 12:45-1:45 p.m., PB-5 Conference Room.
20. Surgical Mortality and Morbidity Conference, last Friday, 12:45-1:45 p.m., PB-5 Conference Room.

Maui Memorial Hospital

1. Department of Medicine, first Thursday, 7-8 a.m., auditorium.
2. Department of Surgery, second Thursday, 7-8 a.m., auditorium.
3. Department of Obstetrics & Gynecology, third Thursday, 7-8 a.m., classroom #2.
4. Department of Pediatrics, fourth Thursday, 7-8 a.m., auditorium.
5. Fifth Thursday Meeting: 7-8 a.m., auditorium.
6. Tumor Board Conference; second Friday and fourth Wednesday, 7-8 a.m., multipurpose room.
7. Anesthesia Conference, second Wednesday, 7-8 a.m., multi-purpose room.

The Queen's Medical Center

1. Anesthesiology Conference, first and second Wednesdays, 7-8 a.m., Doctors' Conference Room.
2. Emergency Medicine Conference, third Tuesday, 11:30-12:30 p.m., Ultrasound Conference Room.
3. ENT Conference, first and second Fridays, 7:30-8:30 a.m., Harkness Room 139.
4. QMC-UH Medical Conference, Fridays, 8-9 a.m., Mabel Smyth Auditorium.
5. MICU Lecture, Mondays, Tuesdays, Wednesdays, and Thursdays, 9-10 a.m., Queen Emma Tower, Room 4B.
6. Neuro-Radiology Conference, Mondays, 8-9 a.m., Imaging Services classroom, QET #2.
7. Ob/Gyn Conference, Mondays, 1-2 p.m., Kam Auditorium.
8. Ophthalmology Conference, fourth Tuesday, 4:45-6 p.m., Doctor's Conference Room.
9. Orthopaedic Conference, Wednesdays, 7-8 a.m., Kam Auditorium.
10. Pathology Conference, Wednesdays, 7-8 a.m., Queen Emma Tower, fourth floor.
11. Pediatrics Conference, fourth Thursday, 12:30-1:30 p.m., Harkness Board Room.
12. Surgical Conference, Tuesdays, 4:30-5:30 p.m., Kam Auditorium.
13. Special Conference: Advance Cardiopulmonary Life Support. For further information, contact Nursing Education 547-4373.
14. Community Consortium of AIDS Physicians in Hawaii. For further information, contact: David McEwan, M.D., 537-2211.

St. Francis Medical Center

1. Oncology Conference, Mondays, 7:30-8:30 a.m., Sullivan IV Classroom.

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INDICATIONS AND USAGE: BECAUSE OF REPORTS OF INTESTINAL AND GASTRIC ULCERATION AND BLEEDING WITH SLOW-RELEASE POTASSIUM CHLORIDE PREPARATIONS, THESE DRUGS SHOULD BE RESERVED FOR THOSE PATIENTS WHO CANNOT TOLERATE OR REFUSE TO TAKE LIQUID OR EFFERVESCENT POTASSIUM PREPARATIONS OR FOR PATIENTS IN WHOM THERE IS A PROBLEM OF COMPLIANCE WITH THESE PREPARATIONS

1. For therapeutic use in patients with hypokalemia with or without metabolic alkalosis, in digitalis intoxication and in patients with hypokalemic familial periodic paralysis.

2. For the prevention of potassium depletion when the dietary intake is inadequate in the following conditions: Patients receiving digitalis and diuretics for congestive heart failure, hepatic cirrhosis with ascites, states of aldosterone excess with normal renal function, potassium-losing nephropathy, and with certain diarrheal states.

3. The use of potassium salts in patients receiving diuretics for uncomplicated essential hypertension is often unnecessary when such patients have a normal dietary pattern. Serum potassium should be checked periodically, however, and if hypokalemia occurs, dietary supplementation with potassium-containing foods may be adequate to control milder cases. In more severe cases supplementation with potassium salts may be indicated.

CONTRAINDICATIONS: Potassium supplements are contraindicated in patients with hyperkalemia since a further increase in serum potassium concentration in such patients can produce cardiac arrest. Hyperkalemia may complicate any of the following conditions: Chronic renal failure, systemic acidosis such as diabetic acidosis, acute dehydration, extensive tissue breakdown as in severe burns, adrenal insufficiency, or the administration of a potassium-sparing diuretic (e.g., spironolactone, triamterene).

Wax-matrix potassium chloride preparations have produced esophageal ulceration in certain cardiac patients with esophageal compression due to enlarged left atrium.

All solid dosage forms of potassium chloride supplements are contraindicated in any patient in whom there is cause for arrest or delay in tablet passage through the gastrointestinal tract. In these instances, potassium supplementation should be with a liquid preparation.

WARNINGS: Hyperkalemia—In patients with impaired mechanisms for excreting potassium, the administration of potassium salts can produce hyperkalemia and cardiac arrest. This occurs most commonly in patients given potassium by the intravenous route but may also occur in patients given potassium orally. Potentially fatal hyperkalemia can develop rapidly and be asymptomatic. The use of potassium salts in patients with chronic renal disease, or any other condition which impairs potassium excretion, requires particularly careful monitoring of the serum potassium concentration and appropriate dosage adjustment.

Interaction with Potassium Sparing Diuretics—Hypokalemia should not be treated by the concomitant administration of potassium salts and a potassium-sparing diuretic (e.g., spironolactone or triamterene) since the simultaneous administration of these agents can produce severe hyperkalemia.

Gastrointestinal Lesions—Potassium chloride tablets have produced stenotic and/or ulcerative lesions of the small bowel and deaths. These lesions are caused by a high localized concentration of potassium ion in the region of a rapidly dissolving tablet, which injures the bowel wall and thereby produces obstruction, hemorrhage or perforation.

K-DUR tablets contain micro-crystalloids which disperse upon disintegration of the tablet. These micro-crystalloids are formulated to provide a controlled release of potassium chloride. The dispersibility of the micro-crystalloids and the controlled release of ions from them are intended to minimize the possibility of a high local concentration near the gastrointestinal mucosa and the ability of the KCl to cause stenosis or ulceration. Other means of accomplishing this (e.g., incorporation of potassium chloride into a wax matrix) have reduced the frequency of such lesions to less than one per 100,000 patient years (compared to 40–50 per 100,000 patient years with enteric-coated potassium chloride) but have not eliminated them. The frequency of GI lesions with K-DUR tablets is, at present, unknown. K-DUR tablets should be discontinued immediately and the possibility of bowel obstruction or perforation considered if severe vomiting, abdominal pain, distention, or gastrointestinal bleeding occurs.

Metabolic Acidosis—Hypokalemia in patients with metabolic acidosis should be treated with an alkalinizing potassium salt such as potassium bicarbonate, potassium citrate, potassium acetate, or potassium gluconate.

PRECAUTIONS: The diagnosis of potassium depletion is ordinarily made by demonstrating hypokalemia in a patient with a clinical history suggesting some cause for potassium depletion. In interpreting the serum potassium level, the physician should bear in mind that acute alkalosis per se can produce hypokalemia in the absence of a deficit in total body potassium while acute acidosis per se can increase the serum potassium concentration into the normal range even in the presence of a reduced total body potassium. The treatment of potassium depletion, particularly in the presence of cardiac disease, renal disease, or acidosis requires careful attention to acid-base balance and appropriate monitoring of serum electrolytes, the electrocardiogram, and the clinical status of the patient.

Laboratory Tests: Regular serum potassium determinations are recommended. In addition, during the treatment of potassium depletion, careful attention should be paid to acid-base balance, other serum electrolyte levels, the electrocardiogram, and the clinical status of the patient, particularly in the presence of cardiac disease, renal disease, or acidosis.

Drug Interactions: Potassium-sparing diuretics; see **WARNINGS.**

Carcinogenesis, Mutagenesis, Impairment of Fertility: Long-term carcinogenicity studies in animals have not been performed.

Pregnancy Category C: Animal reproduction studies have not been conducted with K-DUR. It is also not known whether K-DUR can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. K-DUR should be given to a pregnant woman only if clearly needed.

Nursing Mothers: The normal potassium ion content of human milk is about 13 mEq per liter. Since oral potassium becomes part of the body potassium pool, so long as body potassium is not excessive, the contribution of potassium chloride supplementation should have little or no effect on the level in human milk.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS: One of the most severe adverse effects is hyperkalemia (see **CONTRAINDICATIONS, WARNINGS,** and **OVERDOSAGE).** There have also been reports of upper and lower gastrointestinal conditions including obstruction, bleeding, ulceration, and perforation (see **CONTRAINDICATIONS** and **WARNINGS);** other factors known to be associated with such conditions were present in many of these patients.

The most common adverse reactions to oral potassium salts are nausea, vomiting, abdominal discomfort, and diarrhea. These symptoms are due to irritation of the gastrointestinal tract and are best managed by taking the dose with meals or reducing the dose.

Skin rash has been reported rarely.

OVERDOSAGE: The administration of oral potassium salts to persons with normal excretory mechanisms for potassium rarely causes serious hyperkalemia. However, if excretory mechanisms are impaired or if potassium is administered too rapidly intravenously, potentially fatal hyperkalemia can result (see **CONTRAINDICATIONS** and **WARNINGS**). It is important to recognize that hyperkalemia is usually asymptomatic and may be manifested only by an increased serum potassium concentration and characteristic electrocardiographic changes (peaking of T-waves, loss of P-waves, depression of S-T segment, and prolongation of the QT-interval). Late manifestations include muscle-paralysis and cardiovascular collapse from cardiac arrest.

Treatment measures for hyperkalemia include the following:

1. Elimination of foods and medications containing potassium and of potassium-sparing diuretics.
2. Intravenous administration of 300 to 500 ml/hr of 10% dextrose solution containing 10–20 units of insulin per 1,000 ml.
3. Correction of acidosis, if present, with intravenous sodium bicarbonate.
4. Use of exchange resins, hemodialysis, or peritoneal dialysis.

In treating hyperkalemia, it should be recalled that in patients who have been stabilized on digitalis, too rapid a lowering of the serum potassium concentration can produce digitalis toxicity.

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(Continued)

2. EENT Meeting, first Tuesday, 7:30-8:30 a.m., Sullivan IV Classroom.
3. Surgery Grand Rounds, first, second, and third Fridays, 7:30-8:30 a.m., Sullivan IV Classroom.
4. Dept. of Medicine Morbidity and Mortality Conference, first Thursday of each month, 8-9 a.m. Sullivan IV Classroom. (For SFMC staff members only).
5. Dept. of Medicine Conferences, Thursdays, except for first and last Thursdays of each month, 8-9 a.m., Sullivan IV Classroom.
6. Medico-Legal Seminars, last Thursday of each month, 8-9 a.m., L.Q. Pang Auditorium. (Everyone welcome).
7. Hematology Conference, third Thursday, 12:30-1:30 p.m., Sullivan IV Classroom. (Contact the Education Department at 547-6410 if conference is scheduled for the month).
8. Internal Medicine Review series, Monday, Wednesday, Thursday, Friday, 12:30-1:30 p.m., Sullivan IV Classroom. (Contact the Medical Education Office at 547-6497 for specific dates of lectures.)
9. Dept. of Surgery Morbidity and Mortality Conference, last Friday of each month, 7:30-8:30 a.m., Sullivan IV Classroom. (For SFMC staff members only).

Straub Clinic & Hospital

1. Friday noon Conference, Fridays, 12:30-1:30 p.m., Doctors' Dining Room.
2. Patient Care Conference, second Tuesday, 5-6 p.m., Doctors' Dining Room.
3. Cardiac Surgery Conference, fourth Tuesday, 4:30-5:30 p.m., Doctors' Dining Room.
4. Neuropathology Conference, fourth Saturday, 8-9 a.m., Doctors' Dining Room.
5. Surgical Morbidity and Mortality Conference, fourth Thursday, 7-8 a.m., Doctors' Dining Room.
6. Visiting Professor Conference, variable time throughout the month, Doctors' Dining Room.
7. Gastroenterology Journal Club, fourth Tuesday, 5-6:30 p.m., 5th Floor Conference Room.
8. Fluorescein Angiography Conference, third Thursday, 4:30-5:45 p.m., First Insurance Building, Room 950.
9. Fronk Clinic Educational Meeting, Variable monthly, 6:30-7:30 p.m., Fronk Clinic.
10. Video Conference, first Thursday, 12:30-1:30 p.m., Doctors' Dining Room.

For further information, call the Office of Professional Activities, 522-3151.

Wahiawa General Hospital

1. CME Program, Tuesdays, 1-2 p.m., SNF I Dining Room. For further information, call the Medical Staff Services Office at 621-8411.

Note: All conferences are subject to change. Monthly calendars are available upon request. ■

The power of the art: Humanism, healing and healthcare

David J. Elpern, MD*

This June, from the 4th through the 9th at the Sheraton-Poipu, the non-profit KAUAI FOUNDATION FOR CONTINUING EDUCATION will host an extraordinary symposium on the Garden Island. The course directors, Fred Reppun, Richard Ratzan (Head of the University of Connecticut's Department of Arts and Letters in Medicine) and I, perceived a "dis-ease" with respect to certain aspects of health care. Wordsworth's immortal sonnet sums up our concerns about the direction toward which some of us seem to be headed.

"The world is too much with us
late and soon
Getting and spending we lay
waste our powers
Little we see in Nature that is
ours."

Caught up in the daily grind, many of us–even in this beautiful archipelago–do not sit back and reflect on what we have. Health is one of the most important things we can hope for; yet healthcare has become a business, and with this, certain aspects of it are becoming dehumanized. Yet the joys of being a "health professional" are great if we can only push the mercantile and adversarial thoughts out of our minds.

These are not new ideas; anyone who has read A.J. Cronin's *The Citadel*, or Sinclair Lewis' *Arrowsmith*, appreciates that many of these same problems existed at the turn of this century. Thus, Fred, Rich and I went about assembling a faculty to look at aspects of healthcare which, though vitally important, are not emphasized in medical school curricula or at most post-graduate symposia.

The program evolved from the kernel of an idea; it was nurtured by the caring of The Kauai Foundation's Board and by many concerned individuals. It will be presented to an eclectic group of registrants.

THE POWER OF THE ART will run for five days, from the inaugural oration on the evening of Sunday, June 4 through the farewell picnic on Friday, June 9, 1989.

The introductory lecture will be given by Richard Selzer, MD, an author-surgeon who has written popular essays and books about medicine for the past 20 years. His works include: *Confessions of a Knife; Letters to a Young Surgeon;* and others. Selzer describes himself as being at "the height of my senility." He will set the tone for the program by bringing the discipline of the humanities into the proceedings at the outset.

The following is an overview of the symposium:

Monday, June 5, will cover various aspects of healing which have been important for thousands of years. By contrast, the technological aspects of medicine have been with us as a society for only a period of less than a century. Prior to that, the healers did not have magic bullets, but they did understand that the power of belief (both the patient's faith in the therapy and the healer's confidence in his own art), the power of spirituality, the relationship between the physician and the patient; all these and many other intangibles had, and still have, profound curative qualities. Consideration of these aspects of healing is usually neglected in our education and journal articles. Our faculty for this day consists of our own Mits Aoki, PhD, Professor of Religion at UH; Jeanine Mason-Young, EdD, RN, CS, Associate Professor of Nursing from the University of Massachusetts, who will discuss the role of compassion in healing; Howard Spiro, MD, gastroenterologist and humanist from Yale whose book *Doctors, Patients and Placebos* covers all the themes of this day; and Andrew Weil, MD, a guru of holistic medicine from the University of Arizona. Weil's book, *Health and Healing* is a lucid and complete excursion into the field of complementary medicine. ►

* Dermatologist
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Lihue, HI 96766

CLASSIFIED NOTICES

To place a Classified Notice, MEMBERS, please call Association Office at 536-7702. NON-MEMBERS, please call Leilani at 521-0021. 4 line minimum, approx. 5 words per line. Payment must accompany order.

EMPLOYMENT OPPORTUNITIES

Maui Memorial Group
has an immediate opening for a permanent General Surgeon, vascular experience helpful but not required.
Contact Dr. William E. Iaconette
(808) 242-6464 (days)
(808) 661-0051 (eves)

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(Continued)

Day 2, June 6, our faculty will examine what makes the "health professional" tick. "Why does she do it?" We will look at the highs: "The Flow States," and the lows: A personal history of a woman psychiatrist's malpractice trial. And, we'll spend some time on professional burnout. These themes are germaine to *all* of us, since we all have a love-hate relationship with our work. The faculty consists of Mihaly Csikszentmihalyi, PhD, a professor of psychology from the University of Chicago, whose work on Flow States is studied throughout the world; Sara Charles, MD, a psychiatrist whose book *Defendant* vividly describes her own malpractice trial; and John Henry Pfifferling, an anthropologist from Durham, North Carolina, whose PhD thesis was on physician stress, and who has founded The Society for Professional Well-being, an organization devoted to studying physician stress and burnout.

Wednesday, June 7, the relationship between health professionals and patients will come under the microscope. We were fortunate to find Howard Beckman, MD from Wayne State University, whose research interest is the therapeutic encounter. He has assembled the country's most knowledgeable experts in this field to convene with him and with us at Poipu. A colleague of his, Ann Sedmak Edwards, RNC, a nurse who has devoted a portion of her professional career to considering these issues, will give a special workshop on the nurse-patient relationship. This day's faculty also includes Richard Frankel, PhD; Aaron Lazare, MD and Joanne Trautmann Banks, PhD, the first U.S. professor of literature in a medical school.

Day 4, June 8 is really unusual. For a change, the healthcare professionals will listen to stories of illness in the first person. The idea came to us from reading Howard Spiro's and Harvey Mandell, MD's book *When Doctors Get Sick*. This session entitled: "Don't Ask the Patient–Ask the Doctor," will give some patients an opportunity to educate our registrants. These are Richard Marks, the Sheriff of Kalaupapa, Andre Dubus, a renowned short-story writer and 1988 recipient of a MacArthur Prize who will discuss the effects of major trauma on himself and his family, and Harvey Mandell, a physician who had melanoma and was then prompted to collect over 50 first-person accounts of illness from physicians around the country. Rita Charon, MD from Columbia P & S, will close the last morning with a description of how she teaches medical students by having them assume the patient's role.

That evening, we have a special program by Bernie Siegel, MD entitled "The Psychology of Illness and the Art of Healing," Siegel's book *Love, Medicine, and Miracles* was number one on The New York Times bestseller list for over six months.

The last day, **Friday, June 9**, is appropriately devoted to the Health Professional and Society. Fred Reppun, family practitioner in Hawaii for a half-century, editor of the *HAWAII MEDICAL JOURNAL* and crusader for social issues, particularly a sane nuclear policy, has shaped this day with great care and skill. The faculty will include Victor Sidel, MD, who in 1961 was co-founder of Physicians for Social Responsibility (the anti-nuclear group is the American affiliate of the International Physicians for the Prevention of Nuclear War which won the Nobel Peace Prize in 1986). He was PSR's president in 1987 and president of the American Public Health Association in 1986. Reed Tuckson, MD is the Commissioner of Health of Washington, DC, a city with major social and health problems. Dr. Tuckson, a black, has been outspoken about racial and social issues, and has gained the respect of the community for his views. The wrap-up speaker is Ken Kipnis, PhD, Professor of Philosophy at the University of Hawaii. Ken is a polished orator, a great synthesizer, and he will weave all the themes of the symposium into a peerless Hawaiian quilt. We feel it is fitting that one of our own–a Hawaiian educator, who can hold his own with the imported "heavies" that we have assembled–will conclude our program.

In addition to the didactic sessions, a number of workshops will be offered. ►

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(Continued)

These include two classic Kurosawa films: *Ikiru* and *Akohige*, which deal with issues of health and illness. Other sessions for small groups of registrants will address diverse aspects of chronic disease, stress management, and communication with patients.

Two special workshops have been added: The first will be a discussion by Dr. Patch Adams, founder of the Gesundheit Institute of Arlington, Virginia. Patch was described by Brad Lau, MD, a Fronk Clinic dermatologist, as the most stimulating lecturer he had heard in the entire period of medical school and postgraduate training. "Gesundheit" is building a hospital in West Virginia which will deliver free care to all comers and which will carry no malpractice insurance. Adams will discuss his philosophy of life as a healer.

The second workshop will be organized by Jerry Green, JD, from the Medical Decisionmaking Institute. Attorney Green's novel approach to malpractice described in his recent article in the Annals of Internal Medicine intrigued us. He has consented to join us and offer interested registrants a course he will give at many national conferences. His approach helps redefine aspects of informed consent and simplifies a complicated, frustrating, and often unpleasant area of medical practice. He will charge a small fee.

At this point in time, we have confirmed registrants from Caribou, in Northern Maine, to the Antipodes. They are concerned physicians, nurses, medical and nursing students, psychologists, clergy, educators, and importantly, many members of the lay public. THE POWER OF THE ART promises to be a great Ho'olaulea of healing. We would like to encourage as many Hawaii physicians as possible to attend, since the issues we will cover concern us all. Please join us at Poipu in June for a time of personal and professional enrichment. For further information please write or call The Kauai Foundation for Continuing Education, P.O. Box 3650, Lihue, HI 96766, (808) 245-3351; or contact Fred Reppun or David Elpern. ■

Clinical Pathologist's Easy Chair

FRANCIS H. FUKUNAGA, MD

Human Chorionic Gonadotropin

SUMMARY: The level of serum hCG concentration may differ as much as twofold, depending upon which World Health Organization standard (International Standard or International Reference Preparation) is used for calibration. The results may also differ between methodologies even when the same standard is used, because some methods measure only the intact hCG molecule, some measure both intact hCG and the free beta subunit, while others detect the free subunit better than the intact molecule. The International Standard has substantial amounts of the subunits whereas the International Reference Preparation has no significant amount of the free subunits.

Human chorionic gonadotropin (hCG) circulates as the intact molecule in the normal uncomplicated pregnancy. It is made up of two peptide chains designated as alpha and beta subunits. The alpha subunit is structurally similar to the alpha subunits of the pituitary glycoprotein hormones FSH, LH and TSH. The beta subunits of these hormones are also similar but the hCG beta subunit is immunologically distinct due to its unique carboxyterminal peptide. The half-life of the intact hCG molecule is about 100 times more than that of the free beta subunit. The subunits are cleaved and excreted by the kidneys in the urine, therefore has been intact hCG and the free subunits. The relative concentrations of the intact and subunit fragments differ between serum and urine, among pregnant women and in patients with trophoblastic tumors. The concentrations of intact hCG and its subunits vary in patients with trophoblastic disease because of the unbalanced synthesis of the subunits.

A method that is specific for the intact hCG molecule is theoretically more reliable for the detection of the normal trophoblast than a method only for the beta subunit. However, the first radioimmunoassay (RIA) methods for the intact hCG molecule showed high cross-reactivity with the pituitary glycohormones, especially hLH. One solution to minize this interference was the measurement of the beta subunit unique to the hCG. The first RIA method for the hCG beta subunit developed in 1972 allowed discrimination of hCG from hLH but was a long and tedious procedure that required 24- to 72-hour incubations. Rapid procedures have since been developed with sensitivities of 2 to 5 mIU per ml. These assays detect both FREE beta subunits and the INTACT hCG. A method specific for the intact hCG molecule was recently developed. It uses two monoclonal and antibodies that recognize two distinct antigenic sites (the alpha and beta subunits) of the hCG molecule.[1]

Circulating hCG can be reliably detected eight to 10 *days* after conception, when serum levels are about 25 or more mIU/ml. The levels increase with the development of the conceptus and approximately double every two days in the first six weeks of a normal pregnancy. Changes in this rate of increase of hCG titer is the most sensitive indicator of impending problems of pregnancy. Peak levels of approximately 150,000 mIU/ml are reached at eight to 10 ►

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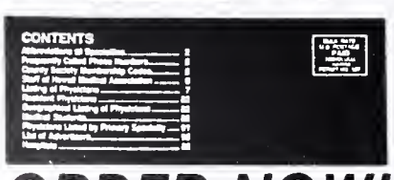
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(Continued)

weeks after conception. The titers then rapidly decrease to a range of 15,000 to 30,000 mIU/ml beginning about the 17th week of gestation. When the hCG level is above 6,000 to 6,500 mIU/ml (IRP), the gestational sac should be visible by ultrasound. Failure to demonstrate the sac when the level is above 6,500 mIU/ml suggests an ectopic pregnancy. A fall of the hCG level before six weeks, or before it reaches 6,000 mIU/ml, is an indication that the pregnancy may not continue.[2] However, about 24% of patients with a subnormal increase of the hCG titer have an otherwise normal pregnancy. Constant hCG titers may indicate a persistent trophoblastic disease, nontrophoblastic tumor, or a discordant result.

Accurate measurement of hCG and its subunits requires accurate standards and knowledge of the specificity of the assay kit used. The First International Standard (1st IS) for hCG was established in 1938. It was prepared from a pool of pregnant women's urine and each 10 mg tablet was defined as having a potency of 10 International Units per milligram, or 1 IU/0.1 mg. Because the stocks of the First International Standard were running low, the Second International Standard was authorized by the World Health Organization in 1960. Each ampule of the 2nd IS for hCG was 5,225 IU/amp, or 1 IU/0.001279 mg, which is 78 times more potent than the 1st IS on a weight basis.

The World Health Organization (WHO) in 1974 established a new standard called the first International Reference Preparation (IRP) of hCG. The First IRP is a highly purified preparation of hCG that is free of significant amounts of the free subunits while both the 1st and 2nd International Standards have both intact hCG and is 12 times more potent than the 2nd International Standard on a weight basis.

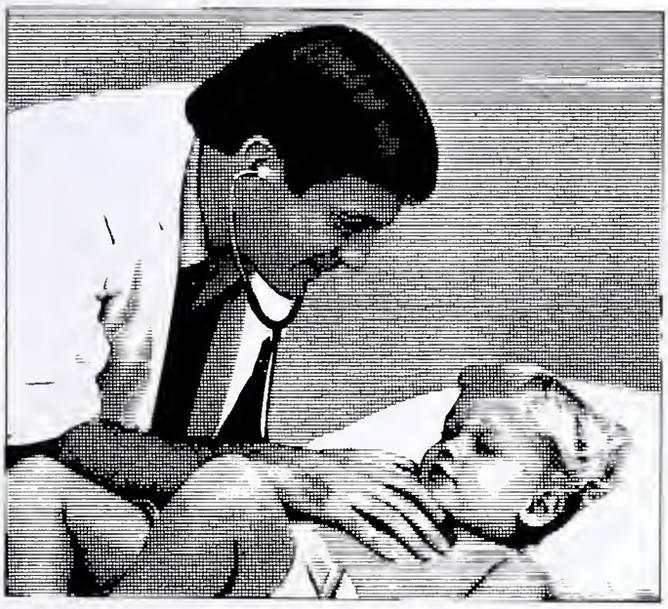
Because the WHO International Standards (first and second IS) contain substantial amounts of both alpha and beta subunits and the WHO International Reference Preparation (IRP) has no significant amount of FREE beta or alpha subunits, hCG values may differ as much as TWOFOLD, depending upon which standard preparation is used by the calibrator.[3] HCG results are also NOT identical between different assay methods. Even when the same standard is used, assay results are not reproducible between assay methods, because some methods detect only the intact hCG, some detect both the intact and subunit fragments and others can detect fragments better than the intact molecule. Some methods labeled beta hCG measure both the intact hCG and beta subunit.

Discordant hCG results occur when the specimen is positive in one assay procedure but negative in another. They are the result of recent advances in hCG assay, mainly due to the increased sensitivity of some of the antibodies. Discordant values may be due to the presence of hCG or hCG-like material in a non-pregnant woman, and in males without a neoplasm, or it may be due to differences in the methodology.[4] Elevated hLH and circulating antibodies to hCG can alter some assays. The positive result is usually low (<200 mIU/ml and usually < 30 mIU/ml); analysis of increasing dilutions yields increasingly higher hCG values. Sequential studies on the patient should be done. The assays standardized with the 2nd International Standard and those that use antibodies that recognize beta subunits will have significantly different values from a similar assay standardized with the 1st International Reference Preparation. ■

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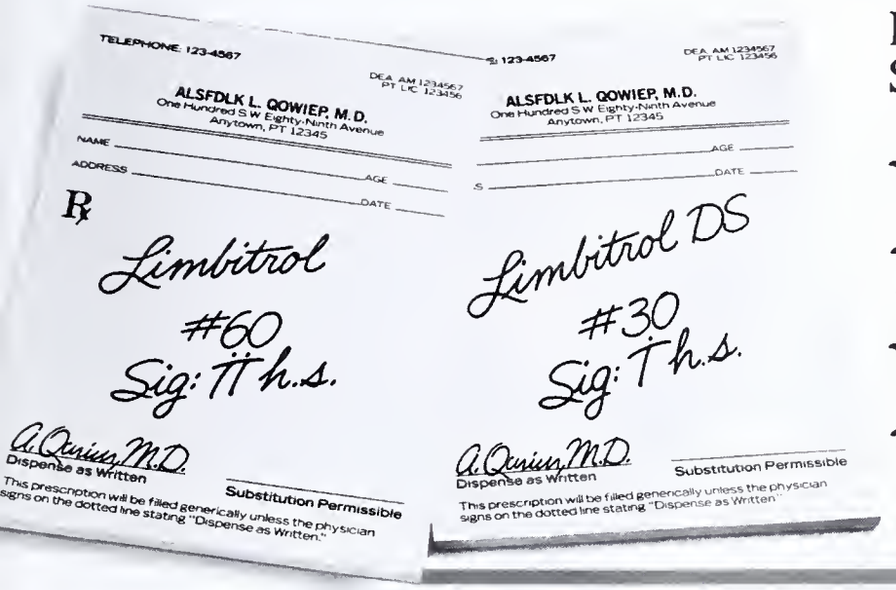
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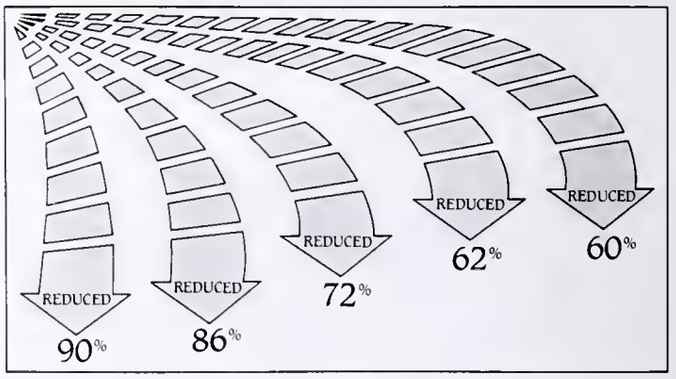
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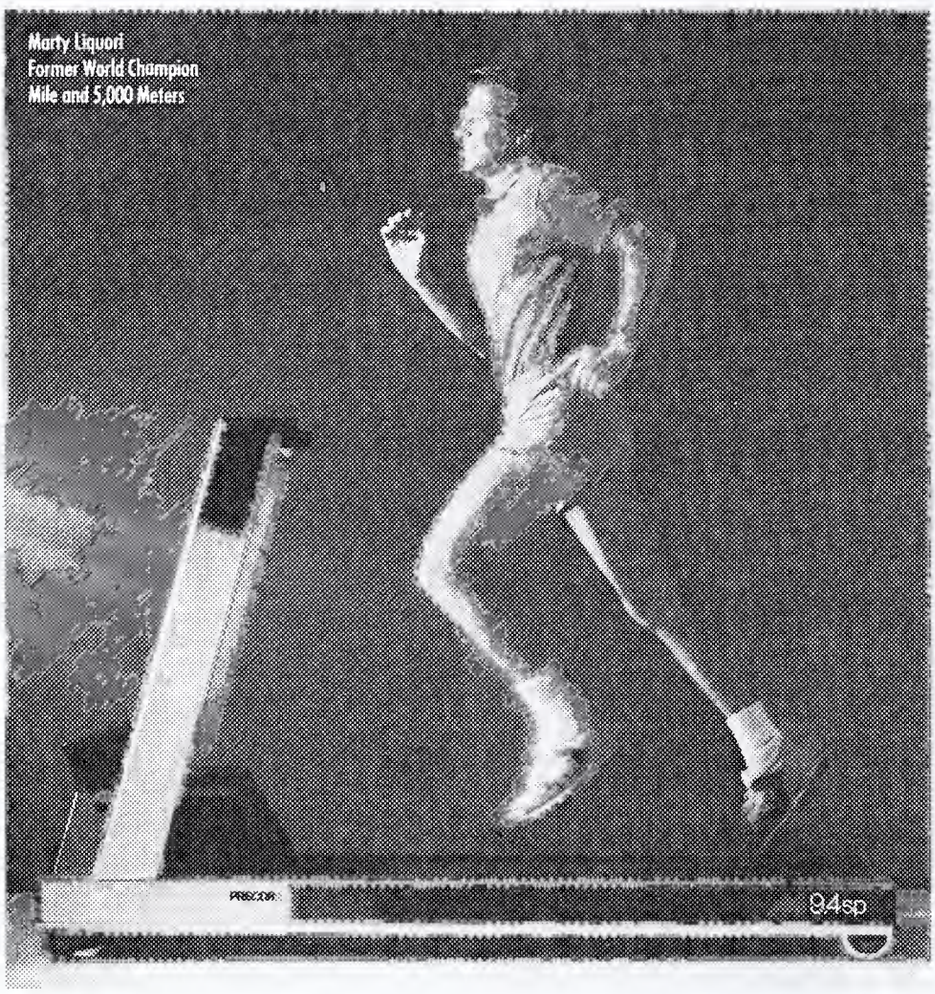
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One epidemic after another

We need a new scary slogan. It used to be "The Russians are Coming," a phrase mothers used to frighten their children into behaving.

Now we have a new one, one that's even scarier, one that can terrorize adults: "The bugs will get you!"

Chlamydia trachomatis is the germ that will silently bring about ZPG — Zero Population Growth — by plugging women's uterine salpinges!

Alan Katz, MD, MPH, of the University of Hawaii's School of Public Health and working through the State's Department of Health, presents us with a review article, supported by a host of references, that should alert Hawaii physicians to this relatively subtle affliction of the genus Homo not-so-sapiens, species hawaiiensis.

After reading all about it — and we do mean "all about it" — one can easily come to the conclusion that, instead of fluoridating our water supply, we should dump tons of tetracycline into our reservoirs. Even though testing for the presence of these germs has been made much easier, faster, cheaper and more certain, the costs are still such that automatic treatment on the basis of mere suspicion might be best for the patient. What's more, treatment of spouses, paramours and all sexual "contacts" should be almost automatic as well and including all newborns. Horrors! Pour the tetra to me, Ted!

Katz shows his UHSPH colors when he expresses the hope that all cases of Chlamydia be reportable to the State DoH. More paperwork for the burdened practitioner; this will be just one more reason to skip the diagnosing and go straight to treatment.

J.I. Frederick Reppun, MD
Editor

Stingray wounds

We are pleased to publish in this issue of the JOURNAL a case report of the effects of a stingray wound caused by its spine.

Stingrays are the hoggoblins of the sea in the eyes of youngsters who are warned against their terrible poison. The stories are largely exaggerated because the creatures, though sometimes tremendous in size, are rarely aggressive. However, we in Hawaii are well-acquainted with occasional encounters with rays of all species, as are all the peoples of the mare pacificum basin and rim.

What makes this article particularly interesting is that the author, Tomosumi Ikeda, MD, is with the Maritime Self-Defense Forces Undersea Medical Center in Japan.

We welcome his contribution.

J.I. Frederick Reppun, MD
Editor



To the Editor:

Resolution No. 3. listed among the resolutions by the HMA's House of Delegates' 132nd Annual Meeting (p. 603, H.M.J., Jan. '89), appears to be a valid effort to remove the social costs for medical maloccurrences from malpractice costs. The further comment, however, on malpractice — equating it with criminal action — demands an immediate response.

Malpractice may be a form of tort, but does not necessarily involve a criminal act.

Since malpractice can include, without criminal intent, negligence, failure of consent, abandonment, breach of confidentiality, breach of contract, loss of chance, and poor judgment*, the notion presented of excluding these occasional failures from insurance protection is most unwise. It is agreed, however, that acts arising out of criminal intent should not be insurable.

In summary, this resolution, as stated, appears to confuse the various theories of malpractice with deliberate criminal acts. If so, this resolution should be unacceptable to both physicians and lawyers.

Frank L. Tabrah, MD
Associate Medical Director
Straub Clinic & Hospital

**Legal Medicine* - Manning - C.V. Mosby Co., 1988.

The Editor replies:

Frank's comment is well taken. Either the HMA Council or the 1989 HoD should reconsider and amend Resolution No. 3.

Chlamydia Trachomatis: A frequently overlooked public health menace

Alan R. Katz, MD, MPH*

Genital Chlamydia trachomatis infections affect 3-4 million Americans each year and are considered to be the most prevalent of all sexually transmitted diseases in the United States. Complications arising from chlamydial infections include scarring of the fallopian tubes, leading to ectopic pregnancy and infertility. Because a significant proportion of chlamydial infections are asymptomatic, this disease is frequently overlooked. Recent developments in low cost, rapid, antigen-detection assays have made widescale screening programs possible. This article reviews clinical and epidemiological aspects of chlamydial infections and discusses control stategies.

Introduction

Chlamydia trachomatis infections are now recognized as the most prevalent and among the most damaging of all sexually transmitted diseases (STDs) in the United States. Because it is currently not reportable, we do not have firm incidence or prevalence data, but it is estimated to affect 3-4 million Americans each year[1]. In the United Kingdom where chlamydia is reportable, the incidence of chlamydial infections doubled between 1970 to 1980, while the incidence of gonorrheal infections remained relatively stable[2]. In family-planning clinics in the U.S., chlamydia infections have been shown to outnumber gonorrhea by 10:1[3].

Chlamydia is responsible for approximately 50% of all cases of epididymitis and non-gonococcal urethritis (NGU) in men (It is the most common cause of epididymitis in men under the age of 35)[4]. Up to 50% of mucopurulent cervicitis (MPC) is due to chlamydia [1,4,5]. Chlamydia is also responsible for 25-50% of all pelvic inflammatory disease (PID)[4,6-8]. It has been estimated that up to 30% of men[9] and 50% of women[10] with chlamydia have no symptoms; unfortunately, the infection nevertheless takes its toll. There has been a 50-60% increase in the incidence of ectopic pregnancies over the past 5 years. Many cases are secondary to post-infectious scarring of the fallopian tubes from asymptomatic cases of chlamydia[4]. Infertility is an important complication of untreated chlamydia. There is a 20% chance of infertility with one episode of PID; this increases to 35-40% with 2 episodes, and 75% with 3 episodes[11]. Approximately 155,000 infants are born each year to mothers in the U.S. who have chlamydia infections, placing these infants at increased risk of developing inclusion conjunctivitis and pneumonia[4]. The cost of chlamydial infections has been estimated at $1 billion per year in the U.S. This is mostly due to the cost of managing PID and its sequelae, as well as in treating neonates with chlamydial pneumonia[12].

Clinical Syndromes

In women, most infections are asymptomatic. When symptoms are present, the most common clinical syndromes associated with chlamydia:

1. MPC—This has been defined as:
 A. Positive cotton swab test. After cleaning the exocervix, a cotton swab is placed into the endocervical os; when removed, a green or yellow color reflects the presence of purulent endocervical secretions and is interpreted as positive[5].
 B. the presence of ≥ 10 polymorphonuclear leukocytes (PMNs) per oil immersion field in a gram-stained specimen obtained from the endocervix[4].
 C. Cervicities: Increased friability of the cervix or increased erythema/edema[3].
2. Urethral Syndrome. The patient presents with dysuria and demonstrates pyuria without bacteriuria on microscopic examination of urine. Urine culture shows "no growth"[13].
3. PID[4].

Men most frequently come in with NGU, presenting as dysuria with or without urethral discharge. When there is a discharge, it is of a serous nature. NGU is diagnosed by visualizing greater than 4 PMNs per oil immersion field on a gram-stained specimen obtained from the uretha, with the absence of gram-negative, intracellular diplococci. Chlamydia may also present itself as an acute

* Assistant Professor of Public Health Sciences
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CONTRAINDICATIONS

There are no known contraindications to the use of sucralfate.

PRECAUTIONS

Duodenal ulcer is a chronic, recurrent disease. While short-term treatment with sucralfate can result in complete healing of the ulcer, a successful course of treatment with sucralfate should not be expected to alter the post-healing frequency or severity of duodenal ulceration.

Drug Interactions: Animal studies have shown that simultaneous administration of CARAFATE (sucralfate) with tetracycline, phenytoin, digoxin, or cimetidine will result in a statistically significant reduction in the bioavailability of these agents. The bioavailability of these agents may be restored simply by separating the administration of these agents from that of CARAFATE by two hours. This interaction appears to be nonsystemic in origin, presumably resulting from these agents being bound by CARAFATE in the gastrointestinal tract. The clinical significance of these animal studies is yet to be defined. However, because of the potential of CARAFATE to alter the absorption of some drugs from the gastrointestinal tract, the separate administration of CARAFATE from that of other agents should be considered when alterations in bioavailability are felt to be critical for concomitantly administered drugs.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Chronic oral toxicity studies of 24 months' duration were conducted in mice and rats at doses up to 1 gm/kg (12 times the human dose). There was no evidence of drug-related tumorigenicity. A reproduction study in rats at doses up to 38 times the human dose did not reveal any indication of fertility impairment. Mutagenicity studies were not conducted.

Pregnancy: Teratogenic effects. Pregnancy Category B. Teratogenicity studies have been performed in mice, rats, and rabbits at doses up to 50 times the human dose and have revealed no evidence of harm to the fetus due to sucralfate. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when sucralfate is administered to a nursing woman.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS

Adverse reactions to sucralfate in clinical trials were minor and only rarely led to discontinuation of the drug. In studies involving over 2,500 patients treated with sucralfate, adverse effects were reported in 121 (4.7%).

Constipation was the most frequent complaint (2.2%). Other adverse effects, reported in no more than one of every 350 patients, were diarrhea, nausea, gastric discomfort, indigestion, dry mouth, rash, pruritus, back pain, dizziness, sleepiness, and vertigo.

OVERDOSAGE

There is no experience in humans with overdosage. Acute oral toxicity studies in animals, however, using doses up to 12 gm/kg body weight, could not find a lethal dose. Risks associated with overdosage should, therefore, be minimal.

DOSAGE AND ADMINISTRATION

The recommended adult oral dosage for duodenal ulcer is 1 gm four times a day on an empty stomach.

Antacids may be prescribed as needed for relief of pain but should not be taken within one-half hour before or after sucralfate.

While healing with sucralfate may occur during the first week or two, treatment should be continued for 4 to 8 weeks unless healing has been demonstrated by x-ray or endoscopic examination.

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Reference:

1. Eliakim R, Ophir M, Rachmilewitz D: *J Clin Gastroenterol* 1987;9(4):395-399.

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Action: Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

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Indications: Yocon® is indicated as a sympathicolytic and mydriatic. It may have activity as an aphrodisiac.

Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.[1,2] Also dizziness, headache, skin flushing reported when used orally.[1,3]

Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.[1,3,4] 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to ½ tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.[3]

How Supplied: Oral tablets of Yocon® 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.



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epididymo-orchitis in men under 35 years of age[4].

It has been estimated that 15-30% of heterosexual men with gonococcal urethritis have a concurrent chlamydial infection. Women with gonorrhea have an even higher rate of concurrent infection: 25-50%[4,14]. Hence it is imperative that all patients with documented gonorrheal infections be treated for a presumptime diagnosis of chlamydia as well.

Risk Factors

The following characteristics have been associated with an increased risk for chlamydial infection [1,3,6,15,18]:

1. Age less than 25 years (especially if under age 20);
2. single;
3. low socioeconomic status;
4. more than one partner in the preceding 60 days;
5. past history of an STD;
6. patient coming in for an STD or STD screen;
7. sexual contact to a partner infected with chlamydia (up to a 70% chance of infection)[4];
8. sexual contact to a partner infected with gonorrhea (up to a 35% chance of infection)[4].

Diagnosis

1. Cell culture: Although chlamydia is a bacterium, it is an obligate, intracellular organism since it cannot produce its own adenosinetriphospate (ATP) (it must parasitize the host cell's energy machinery to survive). Hence, it cannot be grown on the usual bacterial media; it must be grown in cell cultures. For diagnostic purposes, this is considered the "gold standard". The sensitivity is about 80-90% with a specificity of 100%. The drawbacks to this method include high cost, high degree of technical expertise required, and the amount of time needed for the organism to grow (3-6 days)[19].

Recent developments in low cost antigen detection methods have greatly improved diagnostic capabilities. The two main methods of antigen detection are enzyme-linked immuno-absorbent assay (EIA) and immuno-fluorescent assay (IFA). For both assays, a specimen is obtained from either the urethra or the endocervix.

2. IFA: The specimen is placed onto a slide which is then incubated with a fluorescein-conjugated, monoclonal antibody to chlamydia. The prepared slide is scanned under a fluorescent microscope. This method is 80-90% sensitive and 98% specific. Total processing time is approximately 30-40 minutes. This is much less expensive than the cell culture, but requires an experienced microscopist with a fluorescent microscope[4,20,21].

3. EIA: This test uses a colorimetric endpoint which is measured by a spectrophotometer. Multiple specimens may be run together in batches. The test is 67-90% sensitive with a specificity of 92-98%. Total processing time is about four hours[20-22].

What about the pap smear? Prior to the development of cell culture techniques, this was the only method available for diagnosing chlamydia. The cytologist would look for "inclusion bodies" in the cytoplasm of endocervical cells. This method had a very low sensitivity and specificity, even in the hands of the most experienced cytologist. New diagnostic criteria defined by researchers at the University of Washington in Seattle, have shown a much higher sensitivity and specificity[23]. However at the present time, the pap smear should be considered a poor diagnostic indicator for chlamydia infections[24].

Treatment[14]

The treatment protocol recommended by the U.S. Centers for Disease Control for uncomplicated, urethral, endocervical, or rectal infections (including NGU and MPC) is:

A) Tetracycline HCl 500 mg po bid x 7 days; or

B) Doxycycline 100 mg po qid x 7 days.

An alternative regimen for patients in whom tetracyclines are contraindicated or are not tolerated includes:

C) Erythromycin base or stearate 500 mg po qid x 7 days; or

D) Erythromycin ethyl succinate 800 mg po qid x 7 days.

Management of Sexual Contacts[4,14]

All sexual contacts to chlamydia or chlamydial associated syndromes (within 30 days after their partner develops clinical symptoms or has a positive clinical evaluation) should be examined for STD and promptly treated for chlamydia.

All sexual contacts to gonorrhea cases need to be examined for STD and promptly treated with a regimen effective against both gonococcal and chlamydial infections.

Control Methods and the Hawaiian Experience

There are 3 main reasons for the uncontrolled increase in chlamydial infections:

1. The high percentage of clinically inapparent infections;
2. until recently, the only diagnostic test available was cell culture; the cost of this techniqe made it untenable for many clinics and their patients; and
3. because of the high cost of establishing a diagnosis, routine screening protocols had not been instituted in most family-planning clinics.

With the recent advent of low cost, rapid, antigen-detection methods, it has become possible to undertake widescale chlamydia-screening programs. Screening programs which focus on asymptomatic, high-risk women are most cost-effective, because this group accounts for the bulk of the serious, adverse outcomes from untreated infections.

After a successful pilot chlamydia screening project[25], the Hawaii State Health Department has undertaken an expanded program to screen high-risk, asymptomatic women who attend State-subsidized, family-planning clinics. Preliminary results have revealed a chlamydial prevalence rate of 10%[26]. This is comparable to the 6.4 to 11.3% values reported from the Mainland U.S., family-planning clinics[3,16,27]. The overall chlamydia prevalence rates from these clinics varies from 9.3 to 22.5% [1,3,6,15,16,27,28]. The Hawaii State STD Clinic is reporting a

►

13 to 15% overall chlamydia prevalence rate.

An important part of a successful chlamydia-control program is to ensure that all people that have or may have chlamydia are promptly examined and adequately treated. Those persons who are untreated and/or unaware they are infected, pose the highest risk for spreading the disease, as well as the risk of experiencing the complications of an untreated infection. As the sexual partners of infected individuals are at very high risk for infection, all index cases should be interviewed in order to elicit information regarding sexual partners in order to enusre their adequate and timely examination and treatment[29]. If one only treats the index case and neglects to treat his or her sexual partner(s), one virtually guarantees that the invex case will become reinfected. Realizing that physicians in a busy private practice may not have the time nor the expertise to perform interviews and partner referrals, this service is being offered by the disease-intervention specialists at the Hawaii State STD Clinic.

Conclusion

Annual screening of "high risk" females for chlamydia has been shown to be a cost-effective strategy for chlamydia control. It is important to emphasize that screening is an effective strategy when it is *selectively* applied to women who have characteristics placing them at increased risk for chlamydia. The routine screening of married women attending private gynecology clinics (chlamydia prevalence rates less than 3%) would give unacceptably low, positive predictive values[30,31].

The Hawaii State Department of Health is in the process of instituting administrative rules making chlamydial infections reportable. By making chlamydia a reportable disease, we will gain much needed epidemiologic information, and be able to make a more effective impact on this growing public health menace.■

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Supraventricular bigeminy following a stingray envenomation: A case report

Tomosumi Ikeda, MD*

We present a case of supraventricular bigeminy following a stingray injury. The arrhythmia was noted on an electrocardiogram 40 minutes after the sting. Although arrhythmias are reported as one of the consequences of stingray injury, a review of the literature reveals no comparable case.

The envenomation by a stingray spine is known to cause cardiac arrhythmia in some people[1,2]. Animal experiments also show some toxic effects on the cardiovascular system[3]. Despite this, no clinical record of an electrocardiogram abnormality, soon after the injury, has been reported to the author's knowledge. This paper reports such a recording.

Case report

An experienced, well-built 44-year-old male diver (176 cm, 91 k) of the Japan Maritime Self-Defense Force (JMSDF) was involved in scuba-diving training when he was stung on his right upper arm by a stingray (*Dasyatis akajei* measuring approximately 30 cm long, excluding its caudal portion. Five minutes later, the patient reported to sick bay on board the JDS Chiyoda (submarine support and rescue ship), complaining of severe pain in his right arm. He was conscious and slightly excited. The blood pressure was 128/94 mmHg with a regular pulse of 72/min. The stingray puncture wound was about 5 mm in diameter with considerable depth into the brachioradialis muscle. No remnant of the spine's sheath was found on exploration of the wound. Muscles around the wound showed fasciculations.

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A venous line was established immediately and intravenous injections of 20 mg of furosemide and 125 mg of hydrocortisone were given, as well as an intramuscular injection of 5 mg of d-chlorpheniramine maleate. The wound was opened surgically and an intermittent tourniquet was applied. Hot water was not poured on the wound. Twenty-six minutes after the injury, a medical corpsman noticed a bigeminal cardiac rhythm by palpation. At 40 minutes after the injury, an electrocardiogram showed supraventricular bigeminy (Figure 1). The blood pressure was not recorded at this time, but the patient's face became quite pale. The arrhythmia lasted for two more minutes and then reverted to a pre-existing incomplete right bundle branch block (IRBBB) with occasional supraventricular extrasystoles. No antiarrhythmic agent was administered, since the arrhythmia disappeared while the medical staff went looking for the appropriate medication in the sick bay.

Digitalis toxicity, an acute myocardial infarction, and the other organic diseases did not appear to be consistent with the patient's condition and course. However, the patient's personal health record showed a baseline IRBBB first noted on an electrocardiogram done for a routine health check three years before.

Discussion

Cardiac arrhythmias are known as one of the consequences of stingray injury[1,2]. Russell studied the toxic effects of the venom from the stingray spine[3]. Intravenous injection of 1 ml of venom from the round stingray (*Urolophus halleri* into a cat initially caused bradycardia with a normal PR interval). Continued injections caused a prolongation of the PR interval and first to third-degree atrioventricular block. A nodal escape beat was often recorded. With the administration of larger amounts of venom, all degrees of atrioventricular block, sinus arrest and intraventricular block were observed. Ischemic or direct toxic effects on the ventricle were also noted. In addition, respiratory cessation and ultimate deaths were observed.

►



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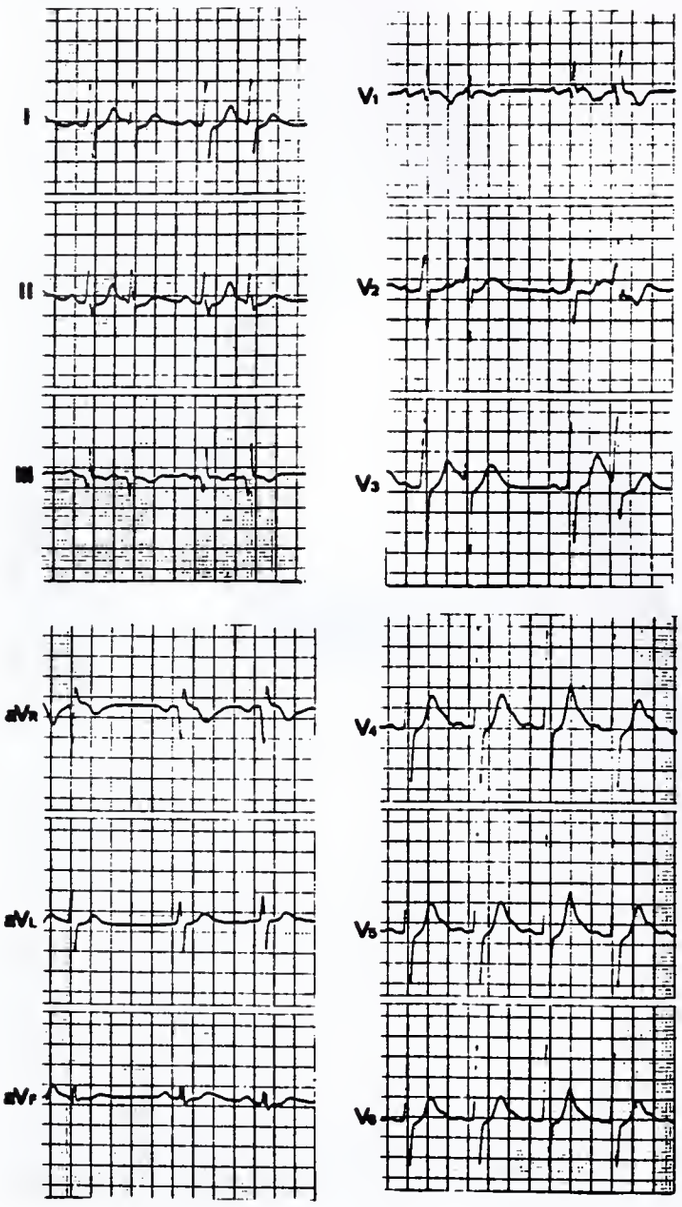


Figure 1: Electrocardiogram showing supraventricular bigeminy.

Supraventricular extrasystoles are rather common in healthy individuals — nodal estrasystole: 0.21%; atrial extrasystole: 0.43%[4] — and tend to be affected by emotion, fatigue, and other stresses. However, frequent extrasystoles, such as bigeminy, were rare[5].

It is possible to conclude, therefore, that the arrhythmia in this patient was caused by toxic effects of the venom of the stingray rather than by severe pain or other non-specific stimuli. The relationship between pre-existing IRBBB and this arrhythmia is not clear.

Some fatalities or near-fatalities from envenomation by stingrays were attributed to apparent trauma such as bleeding or puncture of organs[6,7] and tetanus[8]. However, there were some cases reported in which the cause of death was not identified[8,9]. In these, "shock" or "a toxic effect" were offered as an explanation. Considering the fact that the venom of a stingray spine can have a direct effect on the cardiovascular system, some of these patients' clinical findings could have been caused by the cardiovascular effects of stingray venom.

In our case, the stingray that stung the patient was rather small, whereas the victim was large. Nevertheless, this injury led to an apparent cardiovascular disorder of supraventricular bigeminy. If the victim is small and the animal is large, such as cases reported by Russell[9], serious arrhythmia or other cardiac disorders could cause death. Therefore, although the mortality rate of stingray injury is low[9], it is recommended that an electrocardiogram and antiarrhythmic medications be readily available to shipboard and beachside medical services.■

ACKNOWLEDGMENT

The author is indebted to Lt. Yasuhiro Okamoto, MC, JMSDF at JMSDF Undersea Medical Center for his comment on the electrocardiogram findings. The author also thanks Lt. Mark Llewellyn, MC, USN at Submarine Group 7 for his lingual assistance.

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Sebaceous gland carcinoma of the eyelids in Hawaii

F. Don Parsa, MD*

Sebaceous gland carcinomas of the eyelids are rare neoplasms accounting for less than 1% of all eyelid tumors. They usually mimic chalazia and undergo repeated curettage before a definitive diagnosis is made. Althought they are relatiavely slow-growing tumors, they behave in an aggressive manner, frequently metastasizing to regional lymph nodes. Approximately 50% of the patients who develop metastasis to lymp nodes of the neck will survive five years[1].

A case report and the review of similar cases in Hawaii in the past 10 years demonstrates the need for early detection and treatment of sebaceous adenocarcinoma of the eyelids.

Case Report

A 38-year old Chinese cook was referred for surgical resection of a recurrent "cyst" of the right upper eyelid in February of 1986. Three and seven months previously he had undergone curettages of a "chalazion" from the same area. On physical examination, the right upper eyelid showed a nodular, non-tender mass involving the pretarsal region measuring 8x8 mm (Fig. 1). A biopsy was performed and showed sebaceous gland carcinoma (Fig. 2). The patient underwent a subtotal resection of the involved eyelid with immediate repair, utilizing lower eyelid flap as shown (Fig. 3). The flap was divided 4 weeks later and the final result is shown 2 years later (Fig. 4).

The data on all patients undergoing treatment for sebaceous gland carcinoma of the eyelids was reviewed from data provided by the Hawaiian Tumor Registry (HTR). The results of this survey are presented in Table 1.

Discussion

The most important aspect of sebaceous adenocarcinoma of the eyelids is its ability to masquerade as a benign inflammatory condition. This results in delayed diagnosis and, according to Harvey and Anderson, in increased mortality[2,3]. Rao et al have shown that speedy diagnosis within 6 months after onset of the symptoms decreases the mortality conderably[3]. Early diagnosis can only be achieved when the physician has a high index of suspicion for this malignancy. Another reason responsible for misdiagnosis is related to the method of biopsy itself. The biopsy specimen is often inade- ►

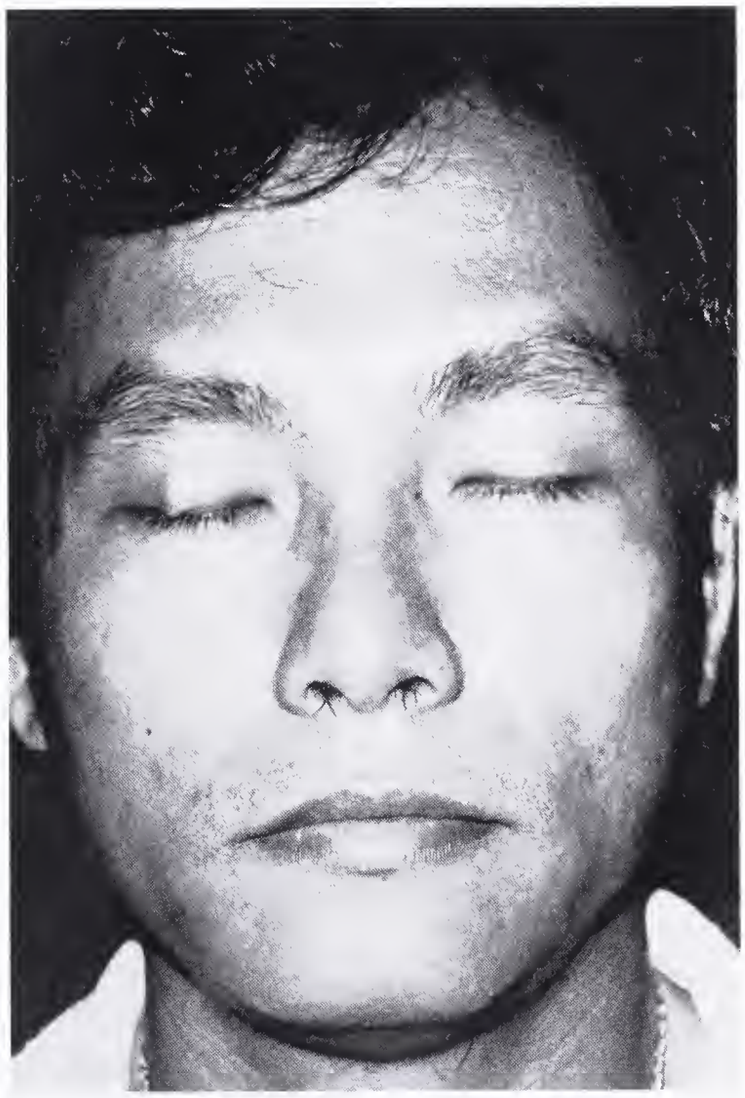


Figure 1. Preoperative photograph shows nodular mass involving right upper eyelid.

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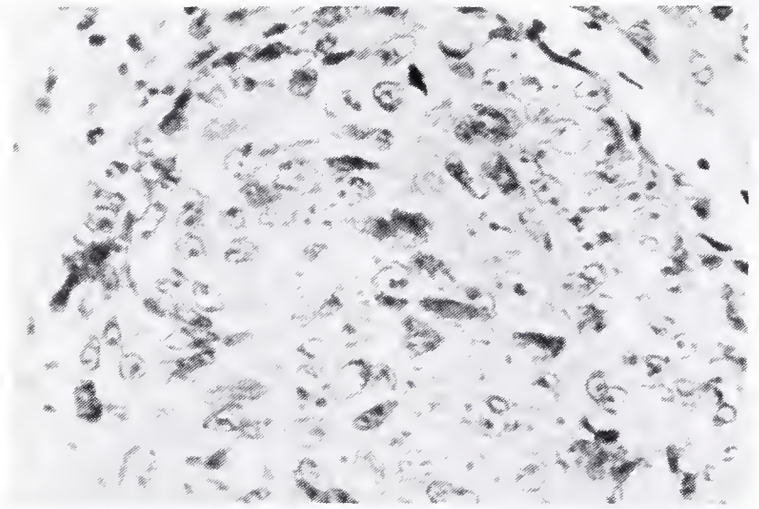


Figure 2. Histology of the resected tumor (H&E; x 480).



Figure 3. Following subtotal resection of right upper eyelid.

quate, but even when it is adequate, it may not contain the tumor. It is also known that eyelid sebaceous carcinoma may be multicentric in origin[4]. Biopsy of sites is recommended if clinical suspicion is high and if a single biopsy is negative, in order to circumvent this problem. It may also become necessary to perform full-thickness eyelid biopsies in suspicious cases in which prior biopsies have been negative[3]. A negative biopsy not only may delay treatment, but can also lull the surgeon into a false sense of security.

The histologic picture in sebaceous adenocarcinoma may be confused with intraepithelial epithelioma; this is the major source of error[3]. Awareness by the treating physician of the association between sebaceous adenocarcinoma and epithelial cells resembling a squamous cell carcinoma-in-situ should help to alleviate this problem.

Most authors have advocated surgery as the best treatment modality[5,6]. Wide excision has been proven to give the best results in a large series[5]. By contrast, radiotherapy has been reported to give poor results, and is usually used as a form of palliation in recurrent cases or in extensive lid or orbital involvement. However, some authors have reported limited success with primary radiation therapy[7,8]. Moh's fresh, frozen-section technique has also been utilized with good success in the management of these lesions[9].

It is apparent that no form of treatment offers a 100% cure rate, but it is also clear that each has its advantages in certain situations.

The age distribution and the incidence of sebaceous gland carcinoma in our series are comparable to other reports[10,11] with a mean of 62 years. However, the sex ratio for the Oriental population (Japanese and Chinese) is 1:1. This is different from what has been reported in other series, in which women predominate[10,11]. No data are available in the literature regarding the Oriental population affected with this condition and, therefore, no comparison can be made with other studies. There was also inadequate data relating to the duration of symptoms

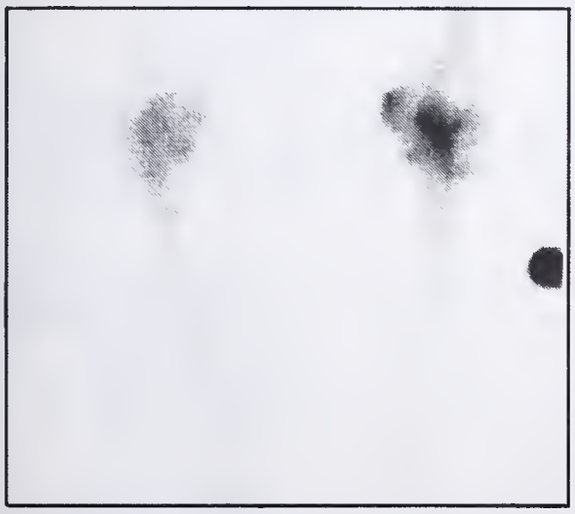


Figure 4. Patient 2 years after right upper eyelid reconstruction by a flap from the lower lid.

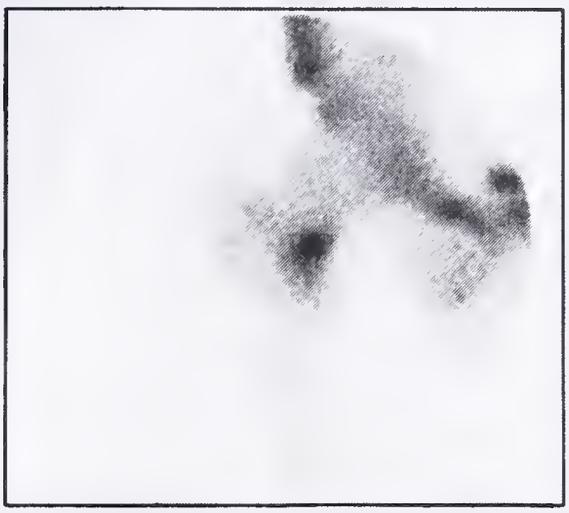
prior to excision of the carcinoma. However, several authors have indicated that patients with symptoms of less than 6 months duration prior to surgery have a better prognosis[10]. Average follow-up in the HTR series was 2.1 ►

Nuclear Medicine Teaching File

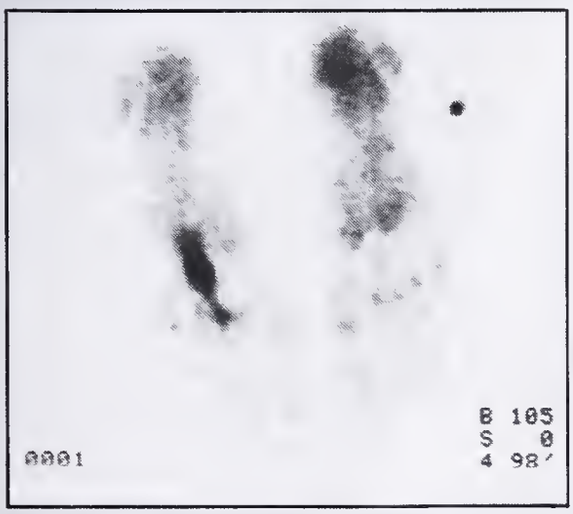
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4. Multiple tibial stress injuries in aerobic dancer.

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years and no case has shown any sign of local recurrence or distant metastasis so far.

Conclusion

A case of sebaceous gland carcinoma of the upper eyelid is presented and the cases of other patients affected with the same condition over the past 10 years in the State of Hawaii are reviewed. A high index of suspicion is necessary for adequate diagnosis. Early diagnosis is extremely important in improving the survival rate in this tumor, which has a mortality rate ranging from 30 to 83%[3,6]. The treatment of choice is wide resection. Although radiation has not been widely used in the past, it may be useful in patients who refuse extensive surgery or exenteration, or in those who are unable to tolerate surgery[2].■

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Council Capers

February 23, 1989

As the sun settled on the Koolaus and as the firecrackers popped in Chinatown, the HMA Council met on Friday, February 3, 1989. Dr. Allan Kunimoto belatedly called the meeting to order.

Stanley Snodgrass of the Healthcare Association of Hawaii made a worthwhile presentation of the problem of the aging of the population. His group will be advocating the recruiting of high-school juniors for a three-week course in health care. This will be in hopes of attracting young people into the health profession, who would help care for the older people in Hawaii, which number two to three times the national average.

Count-off . . . The Secretary's report shows the membership of HMA decreasing to 1,723 — off 43 members from last year. A very slight increase is noted in the total for medical students and residents. This group is most important, however, since it will be the future of HMA and AMA.

Ouch . . . Drs. Barry Odegaard and Kim Thorburn presented a Needle Exchange Program for legislative action to prevent HIV dissemination.

Great News: The 1988 HMA Annual Meeting made a profit of over $1,400. In order to meet the increased cost of the 1989 meeting, the booth rental will be raised to $800.

Auwe . . . The last "Capers" forgot to include the names of the HMA Tennis champs: Drs. Gregory Park and James Bendon!

Name dropping . . . Right after we got used to MCTR (Medical Coalition for Tort Reform), the name is to be changed to Statewide Medical Alliance for Reform of Tort (SMART). Anyway, the budget of $96,000 raised for the Legislative push for meaningful tort reform changes was considered. As you members must realize, that amount will not go a long way; so if you have not yet contributed, please do so.

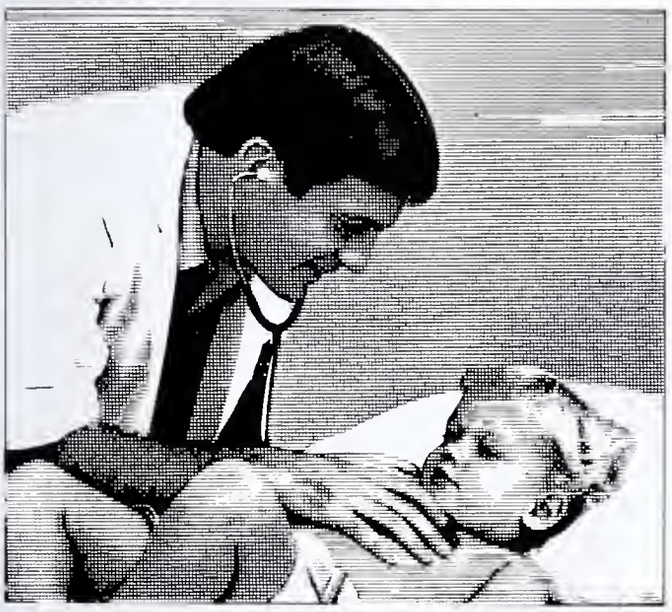
Tip of the Month: Recently, at the Honolulu International Airport I met Dr. Robert Lee Jr., the traveling gourmand. He recommended the Bon Appetit Restaurant. Can't wait to try it. While on Maui, try the Fujiya Restaurant.

Denis J. Fu, MD
Councillor from Maui

Erratum

In the editorial "Hospital Utilization" appearing in the April 1989 issue, the paragraph reading: [Are the Feds trying to hide what may be a black mark against Medicare? That senior citizens are being deprived of adequate and proper care in the interest of "cost-control"? We wonder.] should have been: This article reports data on the pre-DRG era, i.e. when there was no strong cost control by the Feds.

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Pseudothrombocytopenia

Robert T.S. Jim, MD*

Thrombocytopenia, as a diagnosis, may be the result of a spurious laboratory error, as illustrated by the following four cases.

Case Reports

Case 1. A 77-year-old Japanese man had rheumatoid arthritis; he was also on Lasix and Pronestyl. Platelet count by the Coulter Automated Electronic Counter on venous blood anticoagulated by ethylenediaminetetraacetic acid (EDTA) was 27,000/cmm. On the blood smear made immediately from this drawn blood, platelets were deemed adequate and a count made from the smear was 430,000/cmm. Platelet count from his fingerstick, using ammonium oxalate (Unipet) as an anticoagulant, was 480,000/cmm.

Case 2. A 76-year-old retired, male carpenter with myelofibrosis of 1½ years' duration and splenomegaly of five fingerbreadths was on digitalis and androgenic anabolic steriod. The WBC was 39,800/cmm, hemoglobin 9.3 grams, platelet count 63,000/cmm by Coulter Counter on venous, EDTA-anticoagulated blood. Platelets on the blood smear immediately after the blood was drawn were adequate and the count from the smear was 209,857/cmm.

Case 3. An 81-year-old Chinese woman with slight cardiomegaly and minimal compression deformity of the sixth thoracic vertebra and osteoporosis, taking vitamins, oral iron and "red Chinese pills", was found to have a platelet count of 77,000/cmm by Coulter Counter on venous, EDTA-anticoagulated blood. A blood smear analysis done immediately on this blood revealed normal platelets and the count by microscopic examination of the smear was 193,700/cmm. Fingerstick platelet count, using Unipet as anticoagulant, was 215,000/cmm. WBC, hemoglobin and differential smear were normal.

Case 4. A 77-year-old Caucasian woman had a "ruptured blood vessel" on her right leg for one year; she had had a surgical cervical disc fusion nine years previously and took Darvocet and Tyelenol occasionally. A small spike was found in the beta globulin region on serum protein electrophoresis and a 2.3x3 centimeter right suprahilar mass was revealed on chest X-ray, etiology unknown. Skeletal X-ray survey was for metastases was negative. WBC was 5800/cmm, hemoglobin 15.2 grams, differential normal, platelet count 79,000/cmm based on venous blood with EDTA anticoagulant by a Technicon H-1 automated, electronic counter. A blood smear made on this blood three to four hours after it was drawn revealed massive clumping of the platelets. A fingerstick platelet count, using Unipet, revealed 226,000/cmm with the Technicon counter. "Adequate platelets" was found on this smear and the visual count was 182,000/cmm. A repeat blood smear made immediately on venous, EDTA-anticoagulated blood revealed no platelet clumping and a count of 199,333/cmm.

Discussion

Spurious thrombocytopenia (or pseudothrombocytopenia) was first described in 1973[1]. Unjustified withdrawal of needed drugs, unnecessary steroid therapy and splenectomies were performed because of this artifact[2]. In certain healthy or ill individuals (malignancies, autoimmune diseases, acute and chronic liver diseases), platelet counts performed on blood collected in tubes containing EDTA anticoagulant, can result in false, low-platelet counts performed by automated electronic counters. In these individuals a platelet agglutinin, reacting at low temperature, reacts with the EDTA anticoagulant,

(Continued on page 191)

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For Island Businesses

Productivity In The New Decade

By Melissa Chang and Dieter Gedeik

Remember a few years back, maybe as recently as the early part of this decade, when the futurists told us machines would be doing all our work by 1990? Remember when they told us our work was going to become easier and less complex?

They were wrong about one thing — our work is definitely *not* easier. If anything, our work has become *more* complex. But they were at least partially right when they said we'd become more dependent on machines.

But what machines? Were they talking about robots, or did they have enough foresight to anticipate the current wave of the newest machines of telecommunications?

In this new age of sophisticated system needs, the worldwide network of telecommunications has become a day-to-day tool for doing business — especially in Hawaii.

No other location in the world enjoys Hawaii's enviable business venue. We are strategically positioned at the hub of a vast telecommunications network — the center of action, so to speak — where firms can reach out eastward to the Orient, westward to the mainland, and around the globe to Europe, all in a matter of seconds.

And, we owe it all to the telecommunications. Indeed, this strategic geographical location could not be anywhere near what it is today, if it weren't for the explosion of technology and for the development in the enhancement of telecommunications industry.

Actually, when you think about it,

(Continued on page 4)



the telecommunications explosion is incredible. Worldwide communication is now simply a matter of pushing a few buttons.

GTE-Hawaiian Tel can connect its customers anywhere in the world through submarine and underground cables, microwave radio, satellite transmission and fiber optics.

We should all stand up and cheer the recent battle between the long-distance service companies (including Long Distance USA, Sprint, and AT&T) here in the islands. The increased competition has had some side benefits.

Not surprisingly, the competition helped to improve call quality. The cost to the customer for a long-distance call has plummeted more than 50 percent. And jobs were created. Lots of jobs. The latest estimates show Hawaii's labor force increased by more than 500 workers because of telecommunications.

Remember when you'd dial an "800" number and get an apologetic recording that dashed your hopes for a free long-distance inquiry or order placement? No more. The "800" service no longer excludes Hawaii.

In today's mobile society, we are now free to communicate with anyone, anytime and anywhere, thanks to the convenience of cellular telephones. It is no longer uncommon to see people closing business deals on their car phones in the middle of rush-hour traffic, or while sitting at a restaurant counter.

With many commuters spending as long as an hour in traffic every morning and afternoon, cellular phones are a godsend. Normally wasted hours become productive, and in effect, the automobile has become a moving office.

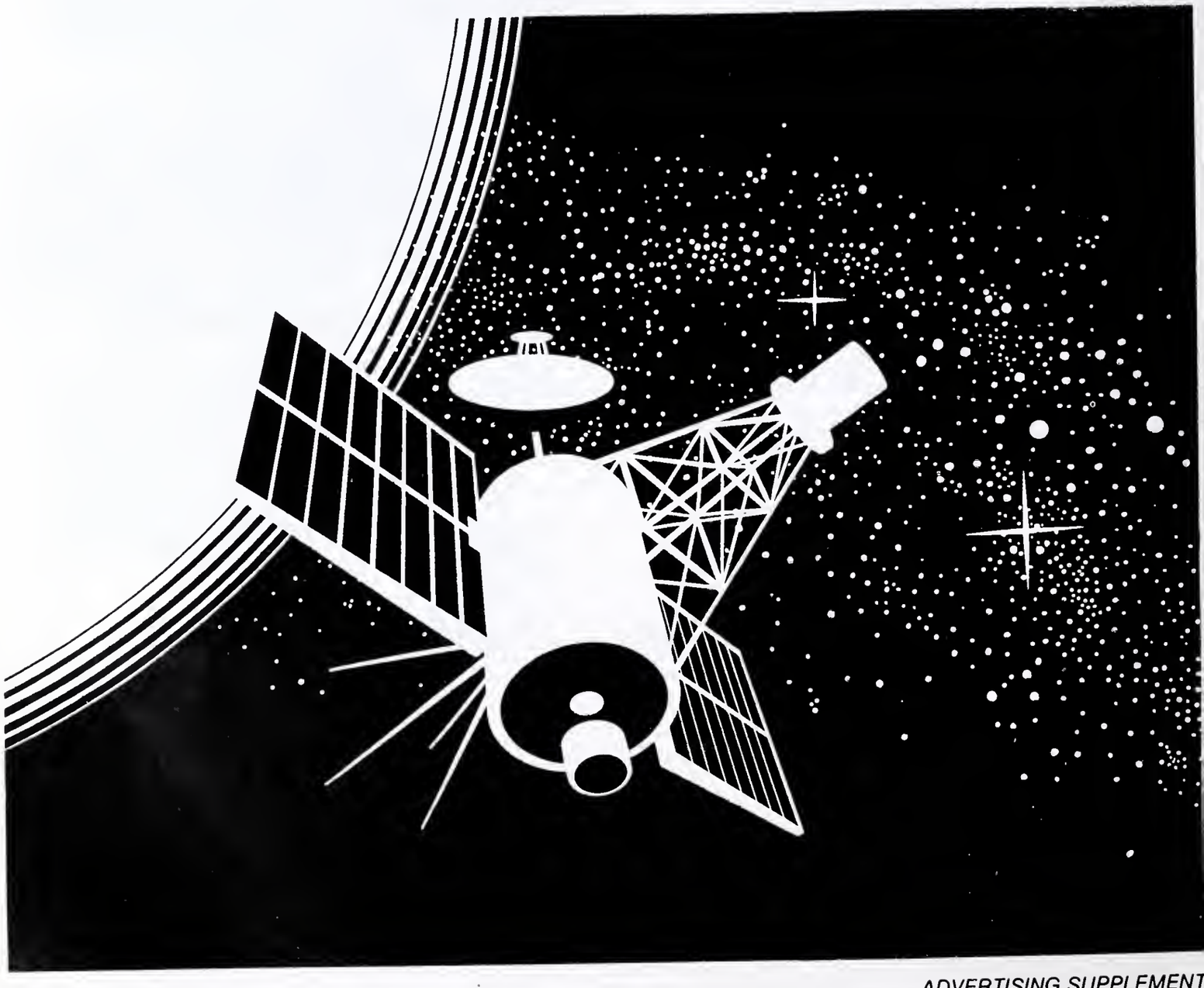
Even more common is the sight of businesspeople walking down the street with cellular phone in hand. As with car phones, not one minute is wasted during the day as business transactions can be carried out at the mere push of a button.

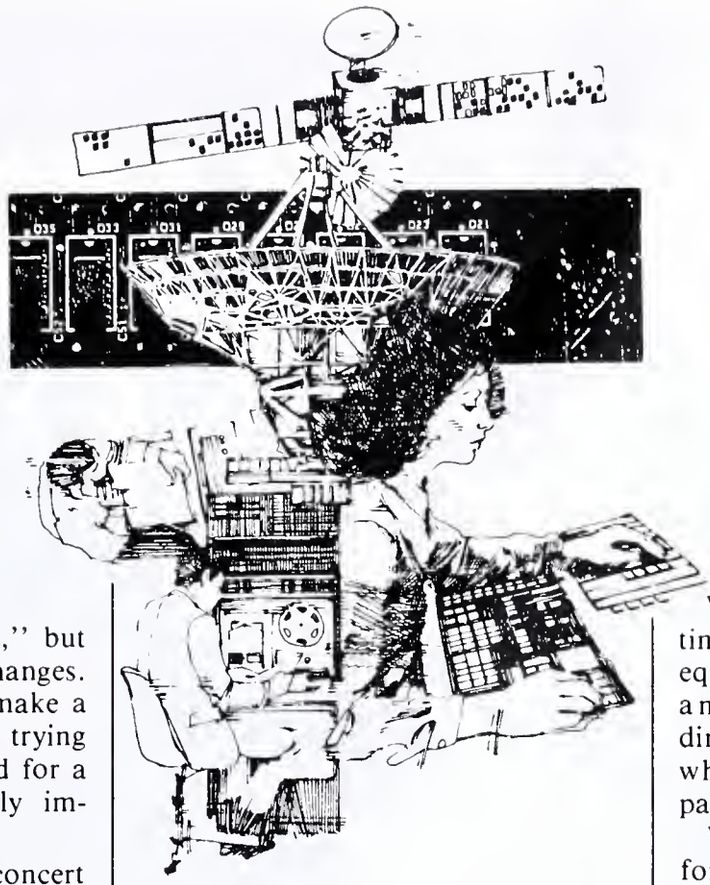
"Cellular" phones are called that because cities are sectioned into a number of smaller areas or "cells." Each cell site has its own low-powered transmitter that is strong enough to service that particular cell without interfering with surrounding cells and their transmitters.

Those of us who had car phones before the advent of cellular service remember losing our calls as we passed over Red Hill. Thankfully, that experience is history.

Currently, there are about two dozen sites on Oahu, set up by Hawaiian Telephone Company and Honolulu Cellular Telephone Company, allowing access nearly anywhere on the island.

But just because you don't have a cellular phone, that doesn't mean you have to be chained to your desk. You can still roam freely with a pag-





ing system.

We still call them "beepers," but they've undergone some changes. Pagers are a proven way to make a connection with people you're trying to reach. They've been around for a while, but they are definitely improved.

You can be "beeped" at a concert (much to the consternation of those around you, however), at a restaurant, or in a business meeting. Better yet, your pager can speak to you; it can store your messages to be retrieved at a more convenient time (to the utter delight of your fellow concert attendees); and it can even display the number you have to call.

Getting back to today's fast-paced office — one of the most essential (in fact, most of us would say "indispensable") pieces of electronic wizardy is the facsimile (FAX) machine. This portable, typewriter-sized wonder has revolutionized the way we do business.

Of course you know the fax concept actually has been around for a long time — it's only recently that the electronics have caught up with the idea and made the service affordable to practically any size business.

Data and information can be quickly transmitted from one location to another accurately through telephone lines. Your fax machine will scan a document, convert the information into electronic signals, and transmit the data as sounds over the phone lines to a fax on the other end.

The other fax in turn converts the signal back into digital form. Faxes are not only wonderful and necessary, they also are affordable. There are numerous makes and models on the market, and prices run the gamut from as low as $800 to many thousands of dollars.

In addition, fax machines can now interface with computers and laser printers for faster, more readable business communication. Computers, long interlinked with modulator-demodulators (modems), can actually serve as fax machines today.

A word about buying. The primary reason for plunging into the telecommunications revolution is productivity. Likewise, the primary reason for changing or updating your equipment is increased productivity.

It's easy to be overwhelmed by the immensity of what's being offered out there.

However, you have to consider as many options as you can. Check out what's on the market, then check out the vendors selling the equipment. Check out service policies and replacement parts. In short, protect your telecommunications investment — it's good business.

Setting up a telecommunications network for your office does not require a large cash outlay at the start. Much of your equipment can be leased. According to R. Erik Soderholm of Bancorp Leasing of Hawaii, leasing makes a lot of sense when you're trying to keep up with the fast pace of technology.

Constant purchasing of new equipment to adjust to a business's needs makes the resale value plunge just as quickly.

What's the sense of making a one-time purchase, having to keep the equipment longer than it's needed, and watching your outdated dinosaur sit there plugging along while technological advancement passes you by?

Why not just lease your equipment for a specific period of time, then get rid of the outdated machine for the newest and most complete technological marvel on the market? It makes sense.

Any leasing company worth its salt knows its equipment well, and can estimate the end worth of the equipment, while allowing a discount on the total value of the leased equipment.

We are still one of America's most rapidly growing states. And as such, we must continue to look ahead for new ways to unlock our tremendous potential. We can do it through tourism, we can do it through agriculture, or we can do it through business.

We can move ahead into the 21st century in any number of ways. But one thing is certain. Without innovations in telecommunications technology to keep up with our human ideas and aspirations, Hawaii will revert back to the isolated paradise it once was — that may be good news to some, but it's bad news for business.

The wonder of today's high technology is that it brings your business a quantum leap closer to the leading edge of the world.

Dieter Gedeik is Owner/Managing Director of Pyramid Consultants, a telecommunications engineering and management support firm. Melissa Chang is an Account Coordinator for Professional Communications, the public relations company of Starr Seigle McCombs, Inc.

Honolulu Cellular Telephone Company

Honolulu Cellular has been a leading provider of cellular communications on Oahu since becoming Hawaii's first cellular utility in 1986.

Glenn Umetsu, local-born president of the company, says Honolulu Cellular committed itself from day one to providing Oahu with one of the best systems in the nation. "We bought and installed the most modern and sophisticated equipment available. To date, we've invested upwards of $14 million in our island wide system, which offers the most extensive cellular coverage on Oahu."

Cellular telephones have changed the way people do business. Armed with a cellular telephone, executives have a "mobile office" capability. "You're never out of touch with the people you do business with," says Michael Linos, vice president of marketing for Honolulu Cellular. "And these days, cellular telephones can interface with personal computers, mainframe systems and fax machines. It's technology that's giving executives an edge in today's competitive marketplace."

Customers are able to sign up for cellular service, choose from a wide selection of mobile or portable telephones and have car telephones installed in a matter of hours at Honolulu Cellular's "full service" headquarters at 1161 Kapiolani Boulevard. Customer service and billing is also handled there.

Aloha Phone Company

The new Panasonic line of phone systems offers the latest in telephone technology. "These systems have the flexibility and features that a businessman or homeowner is looking for," says John Writson, sales representative for Aloha Phone Company.

For businesses, Panasonic's flexibility allows growth both in the number of phones and phone lines. As a business grows, so does the system. For example, printouts of calls will probably not be necessary for small, closely held businesses, but when employee use expands this can become a major management tool. As FAX machines and computers are added, they can be integrated into the phone system to save the expense of additional phone lines.

For homes, the same system permits use of single-line phones allowing a decorator's touch. The kids can still have their teddy bear phone, the living room its marble French phone, a speaker phone in the kitchen, and a cordless phone at the pool. All phones have internal intercoms that can save steps in a large house. Each has access to multiple outside lines if desired. The doorbell intercom and gate/door opener also gives added security and convenience.

Aloha Phone Company has a 10-year history of fabricating custom systems as well as providing sales and repair service for your telephone-related equipment. Their selection of equipment plus a wide range of technical expertise make Aloha Phone Company a must for the informed systems shopper.

Unique Telecommunications Services

Smaller offices are quickly discovering that phone systems lacking in performance can result in big office problems and lost dollars. Maximum efficiency for the small business depends on reliable and affordable phone systems. One such phone system is the Electra 8/24.

"It's one of our most advanced phone systems with all the money and time-saving features you'd expect from a larger telephone system," says Richard Murakami, Unique's Operations Manager. Murakami attributes this to the fact that the Electra 8/24 is manufactured by NEC, one of the world's largest communications, electronics, and semi-conductor manufacturer.

Electra 8/24 gives you a wide range of automatic functions like hands-free dialing, call transfer, speed dialing, last-number redial, and conferencing. It has the capacity to grow to as many as eight outside lines and 24 telephones.

"Best of all," says Murakami, "Both features and equipment can be expanded simply and easily, without interrupting your day-to-day business."

Electra 8/24 can be custom designed with a choice of phones to best meet your needs. All Electra 8/24s are powered by a central Key Service Unit that is sleek, compact, noiseless and fits neatly in any location. They're ideal for small businesses of any type.

Unique Telecommunications, a wholly owned subsidiary of NEC America, offers sales, service, and installation of a variety of communication products designed for small and medium-sized businesses. Servco Pacific Inc., is Unique's Marketing Representative.

THE RAMPAGE IS ON.



The power of RAM Paging Hawaii's exclusive 900 MHz paging network now extends to Maui, Kauai, and the Big Island! Your 7 digit Oahu number is all you need to be reached on all islands. . . .quickly and clearly. Calls to your pager are local calls, no matter where you are! Oahu's best paging network is now Hawaii's best, too.

670 Auahi Street Open Saturdays, too! *523-8822*

RAM
PAGING HAWAII

Tel-A-Com Hawaii

Tel-A-Com Hawaii, the largest and oldest independent telephone company in the state, has introduced a new rental program for telephone systems.

The rental program is designed for both large and small businesses and it provides a unique new method to solve several problems previously encountered when purchasing a business telephone system:

1. No Obsolescence — The rental program allows the customer to trade out the system with no prepayment penalties. Customers may change the system to accommodate growth or to take advantage of new technology releases. All customers can expand their telephone system and system features as their business grows without the limitations of a "locked-in" system purchase or lease.

2. Guaranteed Add-On Prices — Automatic rental add-ons at predetermined prices will allow the customer to expand the system as their company grows with a minimum amount of effort. The customer will also have the security of knowing that expansion parts will always be available. A simple add-on schedule is provided with each system.

3. Complete Maintenance — Each telephone rental has a 100% maintenance contract with no increases during the life of the original rental. The customer no longer has to worry about leasing maintenance costs.

Changes in corporate tax laws have all but eliminated the incentives for a business to own a telephone system. Competitive rental rates with an all-inclusive maintenance contract will allow all Hawaii companies to choose a new option. Tel-A-Com Hawaii will continue to offer competitive prices for outright purchases as well as their new innovative rental plan.

Tel-A-Com Hawaii and TIE communications have announced a new digital telephone system that offers voice and data communications for all small and medium-size Hawaii businesses.

The new telephone system is called the Onyx. The Onyx has been field trialed and installed on the mainland for the last year and now is ready to serve Hawaii. According to Tel-A-Com president, Terry Janocko, the Onyx has been designed to provide cost-effective, full-featured voice and data communications for businesses of all sizes. Until recently, only large Tel-A-Com customers such as Hawaiian Electric and Hawaiian Airlines could take advantage of data communications capabilities. The cost of the technology was too expensive for small businesses. The release of the Onyx has changed the way Hawaii can now do business.

The Onyx has all of the features included in the larger TIE Data Star system installed by Tel-A-Com. The new system has so many features that TIE has now updated the earlier versions of the Data Star and renamed the system as the Onyx Data Star. Tel-A-Com is making arrangements with all of their existing Data Star customers to upgrade the systems at no cost. The new upgrade program allows Tel-A-Com to provide better service with more features because both of the systems are now supported by the same parts.

Janocko stated that all systems will require voice and data capability in the near future. Many systems sold in Hawaii today do not support this new capability and they will probably be obsolete within a couple of years.

The Onyx is designed for businesses with up to 60 telephones. Tel-A-Com has also announced a new telephone rental program that allows its customers to start enjoying the benefits of the future today.

Panasonic Cellular Phones

In today's world of instant information and high-speed communication, you can't afford to miss an important phone call — even when you're on the road. Panasonic Cellular Mobile Telephones give you the freedom to stay in touch.

The advanced EB-KJ3500, Panasonic's latest addition to its cellular telephone line, is a new-generation hand-held model that's smaller, lighter, and smarter than its predecessors. Under 8 inches tall and weighing only 19 ounces, it's small enough to hold in the palm of your hand — and fit in your pocket, purse or briefcase. Its backlit LCD window displays 30 characters and a row of status messages. Its alphanumeric memory can store 40 phone numbers. A function menu guide helps you choose the correct key-in operation. A "scratch pad" dialing feature lets you store a number in memory while you're speaking. The three-level electronic lock inhibits unauthorized use and protects your security. And with its many other standard features, the EB-KJ3500 rivals the versatility and convenience of today's sophisticated desktop phones. It is available with an optional hands-free car mount.

Other Panasonic cellular mobilephones include the EB-310 and EB-311 car-mount models and the EB-362 transportable model. These models all include an easy-to-read liquid crystal display and backlit keypad, electronic lock code, 16-digit, 40-number memory dialing, "scratch pad" memory, call length timer, convenient function keys, status indicator message display and signal strength meter. The EB-311 offers optional hands-free operation. The EB-362 transportable model feature a quick-exchange battery pack and an optional DC cigarette lighter cable that lets you bypass battery operation. It can be hand-carried and even taken boating.

GTE Mobilnet

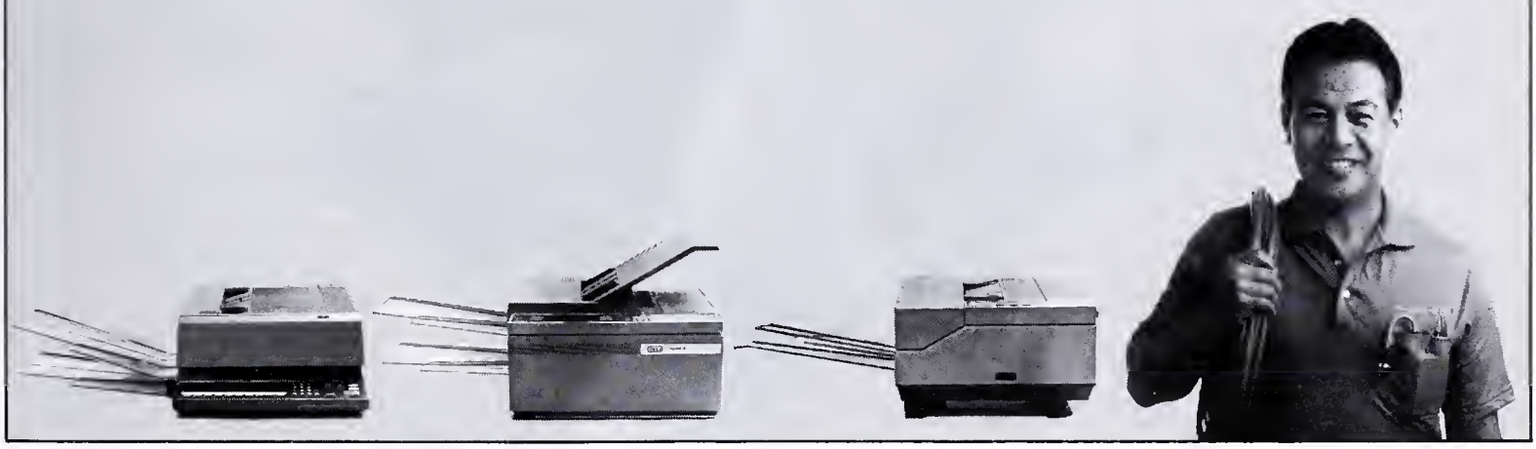
When it comes to shopping for cellular telephones, consumers should know that not all systems are equal.

"Many people buying cellular telephones think more about the brand of instrument they purchase than about the company that will provide them service," said Solomon Kau, Hawaii Area Manager of GTE Mobilnet. "They soon realize that service features can mean the difference between a useful business tool and a one-dimensional cordless phone."

Because GTE Mobilnet of Ha-

(Continued on page 12)

Hawaiian Tel gives you more than the Fax.



We give you what no one else can. Service from the company that provides everything in telecommunications—from the instruments, such as a Fax terminal, to the very lines that transmit your message.

For many businesses, a Fax machine offers the fastest, most cost efficient way to transmit text, diagrams or pictures. Across town or across the ocean, in a minute or less.

Hawaiian Tel has a wide variety of Fax models to choose from. More important, we have the experience and the experts to help you select the model that fits your business needs exactly.

Call Hawaiian Tel at 546-4473 or visit any Phone Mart. Get more than the Fax.

GTE Hawaiian Tel

Beyond the call

What do 50,000 Hawaii Busines

Tel-A-Con

The Smartest Telephone Decision in Hawaii



Large system features at small system prices!

SIMULTANEOUS VOICE and DATA SYSTEM at the most cost efficient pricing in Hawaii. Every station can support Data communications economically - today or in the future.

20 to 192 telephones with economical growth as a Key System, Hybrid, or PBX. Three systems are supported in one unit for all business needs and expansion.

Built in "Call Accounting" with account codes and custom call reports are standard.

Optional "CPU and Power" redundancy is provided for the highest reliability in its class

Standard "Auto Fault Reporting" will call the Tel A Com office day or night in the event of a failure. This feature provides the best service available in the marketplace.

Standard "System and Station Voice Prompts" help all users maximize system features.

Hundreds of other standard features are included that make the Data Star the best system investment for today and the future. Over 3000 systems installed worldwide.

TEL-A-COM HAWAII INC.
more than just a telephone company.

/ TIE® DATA STAR™

elephone users have in common?

Hawaii, Inc.

TEL-A-COM HAWAII ANNOUNCES:

IBM 9751



Hawaii's State-of-the-Art for Business Telephones.

Imagine—the power to handle all the voice and data requirements of Hawaii's businesses, large and small—packed into a digital PABX the size of an average bookcase.

It's here—the IBM 9751 Business Communications System. An integrated, fully-digital office communications system created by IBM and ROLM, two of the world's leaders in innovation.

Call TEL-A-COM at 524-1995.
And say hello to the future.

TEL-A-COM HAWAII / IBM 9751 CBX

TEL-A-COM HAWAII 850 Iwilei Road, Honolulu, HI 96817

(Continued from page 8)

waii's parent company is the fourth-largest cellular carrier in the nation and pioneered many of the industry's new innovations, the company can offer many exclusive services to Hawaii subscribers at no extra cost.

These exclusive features offered by GTE Mobilnet include:

- Automatic access to cellular systems in more than 300 cities in the United States and Canada;
- Automatic call forwarding of calls to these same cities;
- A battery-saving feature for portable phones equipped with V.O.X.
- A service that gives travel directions to cellular users in the San Francisco Bay Area by dialing *MAP.

In January, a break-through cellular service pioneered by GTE Mobilnet was introduced in Hawaii. Follow Me Roaming℠ automatically forwards subscribers' calls to their cellular telephones, where upon the user pays for only completed calls. The service is currently available in 110 of the cities with Automatic Roaming. With other non-automatic roaming systems, cellular phone users must plan days in advance of traveling and notify their destination city so that calls can be forwarded once they arrive.

"On March 12 we installed a larger switch on Oahu to accommodate the service expansion and the growth we've been experiencing in Honolulu," said Kau.

"Additionally, we expect to begin service on the Neighbor Islands in the fourth quarter of 1989." The Federal Communications Commission recently granted the company permission for construction of radio sites in the County of Kauai. Kau expects to receive FCC construction permits soon for the counties of Maui and Hawaii.

Cellular telephones programmed for GTE Mobilnet services are available through Phone Mart, Radio Shack, Hawaiian Telephone, Oceantronics, Mobile Communications Specialists, and other designated GTE Mobilnet agents.

GTE Hawaiian Telephone

High tech? You bet — GTE Hawaiian Tel is a high-tech company. Our telecommunications network carries voice, video and data messages every day throughout the state, across the Pacific, even around the world. Here are a couple of new services that demonstrate our high-tech performance.

Videoconferencing is the hottest communications game in town from Hawaiian Tel. (Call 546-4663 for information.) From our state-of-the-art videoconferencing center at our Bishop Street headquarters, we can put you face-to-face with business executives in Tokyo. Rather than enduring long hours in the air, fighting jet-lag and spending a bundle on international travel, you can handle your business from Hawaii with Japanese clients in an hour or two.

Hawaiian Tel's videoconferencing center is designed with special video, audio, lighting, acoustics and graphic presentation features. The focal point is a console with two large-screen television monitors — one shows the incoming picture, while the other shows what you're transmitting. You can display and discuss any visual aids — graphs, blueprints, legal documents. And with our ceiling-mounted zoom camera, you can even read the fine print on a credit card.

Currently, we're offering videoconferencing service only to Tokyo through an agreement with Japan's international carrier, Kokusai Denshin Denwa. But we're working to develop agreements with other international carriers and expand videoconferencing service throughout the Pacific basin.

Still another new service at Hawaiian Tel comes from our Systems Integration Division — *Interlink Solutions* — which can be your one-stop provider for your information management needs. With all the computer equipment and technologies available today, choosing the right mix to best fit your needs can be quite a challenge. You need a partner who you know and trust. Someone who has the experience, resources and personnel. Someone who will be here next year and in the next decade.

Hawaiian Tel has over 50 years of experience in designing and building integrated information systems here in Hawaii. As a *vendor-independent* company, we offer unique advantages — we can tap every vendor source in town, as well as our own expertise to handle your information management needs.

Our *Interlink Solutions* group can provide three valuable services for you. As your systems consultant, we will:

- Provide project management and technical expertise necessary to successfully integrate computing and network technologies with your operations.
- Provide ongoing support services to keep your information systems functioning effectively with our experienced staff.
- Help harness your organization's information resources to attain your management goals and objectives.

Hawaiian Tel puts the resources of a multibillion-dollar company at your disposal to see that you get the optimum solution to your information management needs. Contact our *Interlink Solutions* division at 546-6961 for the single source you know and trust.

Even though Hawaiian Tel has been around for over a century, we're not resting on our laurels. We're always on the lookout for innovative ways to use our equipment and information to help your business grow. Give us a call and let's talk about putting our high-tech capabilities to work for you.

Even though Hawaiian Tel has been around for over a century, we're not resting on our laurels. We're always on the lookout for innovative ways to use our equipment and information to help your business grow. Give us a call and let's talk about putting our high-tech capabilities to work for you.



Hit The Road, Jack.

You don't have to be out of touch no more no more no more no more.

Because Hawaiian Tel has an exceptional line of phones and pagers that are made for people who are on the go.

Hawaiian Tel offers solid warranties backed by a comprehensive service network. What's more, you can take advantage of our lease options and flexible rate plans.

Our cellular service features the combined expertise of Hawaiian Tel and GTE Mobilnet, providing you with the best in local and national telecommunications. Plus, our pagers now come without the usual connection fee, so you can take off with an extra $45.50 in savings.

So before you go anywhere else, call Hawaiian Tel at 732-9500. And get the show on the road.

GTE Hawaiian Tel

Beyond the call

GTE Mobilnet® Cellular Communications

GTE Hawaiian Telephone

You're a small-business owner and your time is precious. How can you stay on top of all the latest communications tools to help your business grow?

The answer is obvious — GTE Hawaiian Tel's Phone Mart Business Center at 320 Ward Avenue (across from the GEM store). It's the only Phone Mart in Hawaii that's designed to meet the special communications and office equipment needs of small businesses — all under a single roof.

Can the Phone Mart Business Center help your business? Yes — in fact, it was created to benefit over 20,000 small-business customers in the state with two to 50 phone lines. In addition, Hawaiian Tel's 12 regular Phone Mart stores — primarily geared for residential customers — can serve the basic needs of very small business customers.

What products and services can you get at this one-stop Phone Mart Business Center? Besides ordering your new phone service and additional telephone lines, the business center's staff will consult with you. According to Debbie Arnold, Hawaiian Tel's small business/retail director, "Our sales staff has been specially trained to help small-business customers identify their communication needs. We then can suggest the right products and services to meet those needs."

At the Phone Mart Business Center, you can also buy state-of-the-art office equipment such as:

- Multi-line phone systems and SELEX
- Local Area Networks (LAN)
- Office phones
- Cellular phones
- Pagers
- Facsimile machines and worldwide FAX service
- Typewriters and word processors
- Copiers

The Phone Mart Business Center is open for business Monday through Saturday, 9 a.m. to 5 p.m. Drop in and have all your business communication needs addressed in one convenient location.

RING, RING, RING, RING, RING, CLICK.

Another one of your customers may have just hung-up!

And a telephone that rings more than twice could raise doubts about whether you're open for business.



AEC™ Automation Electronics Corporation

The solution is MAX. A fully automated telephone attendant that provides a complete array of voice messaging capabilities. MAX can automatically route calls to the proper extentions, forward calls to the receptionist, take and delivery individual messages, even screen calls, plus much, much more. AND has a payback period as short as two or three months!

Now your business can enjoy a professional telephone image, with higher caller satisfaction and higher productivity.

DATA TEL & POWER

Call Mike Murphy today for an individual consultation.



Mike Murphy
Exec. Vice President

531-7177 Ext. 206

404 Piikoi Street, Suite 223-A, B15
Honolulu, HI 96814

RAM Paging Hawaii

The company that brought 900 MHz paging technology to Hawaii has announced the extensions of its service to Maui and Kauai. RAM Paging Hawaii, subsidiary of RAM Broadcasting Corporation, one of the nation's leading radio common carriers, commenced paging service operation on July 1, 1988, by introducing a new islandwide paging network for the island of Oahu. When the FCC released 900 MHz frequencies, the commission authorized higher-powered transmission than the traditional UHF or VHF channels giving 900 MHz paging providers greater range and deeper in-building penetration that is crucial for reliable paging service. "We decided to construct a network second to none and we proceeded to

(Continued on page 16)

Panasonic

Hand-Held Cellular Phone: Smaller, Lighter, and Smarter.



On the road or off, the Panasonic EB-KJ3500 Hand-Held Cellular Telephone makes it easy to stay in touch. Less than 8″ tall and weighing only 19 ounces, it's small enough to fit in your pocket, purse or briefcase. And it's available with an optional hands-free car mount. So, wherever you go, you'll never miss a call.

The EB-KJ3500 is not only smaller and lighter, but smarter. Its backlit LCD window displays 30 characters and a row of status messages. Its memory can store 40 phone numbers. And its many other features compare with those of today's sophisticated desktop phones.

Find out more about this state-of- the-art cellular telephone. Call Panasonic at 488-7779 for the name of the dealer nearest you.

Panasonic
H A W A I I

Growing and Changing with Hawaii.
Halawa Valley Central Park.

(Continued from page 14)

build 12 transmitters around the island. By building more transmitters operating at higher output power, our intention was to cover the entire island including inside Honolulu's densely contructed downtown and Waikiki districts," says Terry Revnak, President and General Manager. "We had determined this need in our experience with the construction of Honolulu Cellular's islandwide network and found that no other carrier could provide a consistently strong or reliable signal."

The Hawaii Public Utilities Commission is expected to grant RAM's request to extend its service to the Big Island. This will clear the way for the completion of the final phase of what will be a comprehensive statewide paging system. "The beauty of our network configuration is that our customers can take their RAM Pager almost anywhere in the state and receive their page on their local 7 digit number," says Revnak. "Through other carriers, off-island service is either not offered or often requires an 800-number access or an entirely different telephone number. This is much too cumbersome for the traveling user and may require the caller to dial long distance. The RAM network solves these problems."

RAM Paging Hawaii also offers a variety of Voice Mail services and can customize Voice Mail to the needs of each subscriber. Through its affiliate, Honolulu Cellular Telephone Company, RAM offers a variety of cellular phones as well. It is now very common for a person who needs to stay in touch to have a cellular phone with Voice Mail and a digital pager to alert him/her of messages. This ultimate communication combination gives the user maximum flexibility and immediate notification of important calls.

RAM Paging Hawaii's offices are located at the Coral Commercial Center at 670 Auahi Street. Its offices are open weekdays 7:30 a.m. to 6 p.m. and Saturdays 8 a.m. to noon.

Data Tel & Power

Data Tel & Power, Inc. has gained a valuable reputation in Hawaii by providing solutions to the complex communications problems Hawaii's businesses face. As the name implies, Data Tel & Power, Inc. specializes in Data Communications, Telecommunications and Power environment equipment.

The telecommunications division has helped Hawaii's businesses "win the war against caller neglect." It seems the way businesses communicate to their customers should improve with all the new "digital" and "hybrid" telephone systems that are advertised as being the best or total solution to their problems. In most cases this is not true in fact; buying a new telephone system can intensify existing problems and can create new problems as well. One doesn't fully utilize or even need all the new enhancements, which is the reason why they bought the phone system in the first place.

Telecommunications is the vital link for any business. Sales are made, purchases arranged and business conducted all via the telephone. How well you handle these calls de-

JUMBO SHRIMP.



NEC's new Electra™ 8/24 offers growing businesses big-size telephone features with a small-size price tag.

NEC dishes up a brand new phone system in a compact shell at a shrimp at a price. But that's the only small thing about it.

Jumbo features.

We've stuffed Electra 8/24 with over 80 advanced features and conveniences you'd expect only from a much larger telephone system. It comes with hands-free answerback on intercom calls. System and station speed dialing. Toll restriction. Conferencing, and more. All of which make your work day easier and more productive.

Jumbo flexibility.

We'll prepare your system any way you'd like. Choose from a variety of phones, including display and non-display models, a DSS/BLF console for reception and other high-call areas, plus door phones that offer a door lock release capability. A microcomputer in each phone permits easy feature programming, phone by phone. Easy reprogramming, too! What's more, its modular design means Electra 8/24 grows as you grow, so your investment remains well protected.

Jumbo reputation.

Of course, the biggest bonus of Electra 8/24 is that it's made by NEC. A multi-billion dollar world leader in "C&C" (Computers and Communications), NEC's reputation for quality, reliability and innovation spans nearly 90 years. And that's no fish story. For details on NEC's new Electra 8/24, contact:

Unique Telecommunication Services, Inc.
677 Ala Moana Blvd., #801
Honolulu, HI 96813
Call 521-2666/848-2411

NEC
C&C Computers and Communications

UTS Unique
TELECOMMUNICATION SERVICES, INC.

termines how long you'll be in business or how satisfied your customers remain. No matter how you look at it, incoming calls can be the biggest obstacle your company may face and buying a new telephone system will not improve these obstacles because of the "human" factor (a person can only handle one call at a time no matter how new or technologically advanced your phone system is).

Callers and customers who experience ring-no-answer, long ring-delays or "please hold" may not call back. Telephone tag can slow down or even halt important business transactions. Mishandling your telephone inquiries can result in a lost sale or a lost customer.

The solution? Call Mike Murphy at Data Tel & Power and arrange to put an end to caller and customer neglect and win the war with your incoming callers!

First Hawaiian Bank

Talk directly to your bank accounts with yur push-button phone? It's easy with TellerPhone Home Banking, one of several electronic product innovations offered by First Hawaiian Bank. TellerBank Home Banking enables the user to check account balances, find out which checks have cleared, transfer funds between accounts and pay bills, both now and in the future, all in the comfort of one's own home.

All an individual needs to use the service is a touch-tone phone and a secret code number (which is provided to checking account customers). TellerPhone Home Banking is available 24 hours a day, seven days a week for only $1 a month.

First Hawaiian also offers a TellerPhone Business Banking service for business customers who are interested in the benefits of improved cash management. With this service, businesses can find out certain account balances and which checks have cleared, as well as transfer funds between linked accounts.

For those businesses that want a more comprehensive electronic banking service, First Hawaiian offers OnLine Business Banking. All a business customer needs to utilize the service is a standard terminal or microcomputer with a modem.

OnLine Business Banking provides balance reporting for First Hawaiian accounts and accounts at other financial institutions as well. Customers can see both their ledger and collected balances, and the amount of float in their accounts. OnLine Business Banking will also provide the total dollar amount of debit and credit transactions, together with the number of items of each.

The service will also provide the user with a detailed report of transactions cleared through his/her account within the last 45 days. For those Hawaii companies who work with foreign concerns, there is also a foreign exchange rate feature that provides the most current rates.

OnLine Business Banking is easy to use and comes with step-by-step instructions. Since security is a primary concern, customers select their own security code and decide just who has access to the account information.

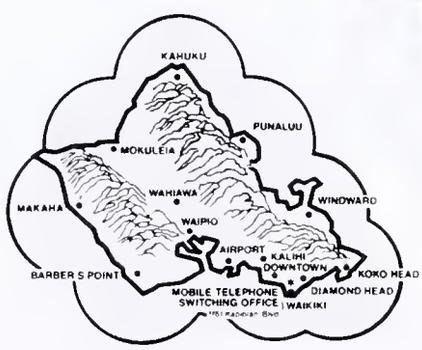
For more information on either TellerPhone service or OnLine Business Banking, contact the First Hawaiian Bank branch nearest you.

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Cellular phones — These phones work on radio waves through a network built by GTE Mobilnet, with Hawaiian Tel as the sales and service agent. You can select any of these types of cellular phones from Hawaiian Tel:

- A *mobile* phone is one that's installed in your car and powered by your car's electrical system.
- A *transportable* phone is attached to a battery pack about the size of a Kleenex box. These are ideal for construction sites and other out-of-the-way places.
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Facsimile (FAX) machines — Hawaiian Tel's Phone Mart Business Center at 320 Ward Avenue has an array of FAX machines to choose from. A FAX machine can send an exact copy of writing, photos or drawings anywhere in the world. It works by scanning the document and changing the graphic image into electronic signals through a process called digitizing. The signal is sent through telephone lines at 15-30 seconds per page.

Teleconferencing — *Conference Connections* is Hawaiian Tel's unique service that brings together three or more parties in different locations on one phone connection. The beauty of this conferencing service is that you connect with people wherever they are — on another island, on the mainland or even in another country. Just call 643-CONF or "0" to make conference reservations and to select the appropriate service. Hawaiian Tel's operators and special equipment will do the rest. If you wish to have a permanent record, we can also make a recording of your conference call. With the capacity to link 10, 20 or even 100 parties (with special arrangements), teleconferencing is a cost-effective alternative to personal meetings.

Whatever your business communications concerns might be, Hawaiian Tel has a solution for you. We've been around since 1883, and we're still your best bet in the business.

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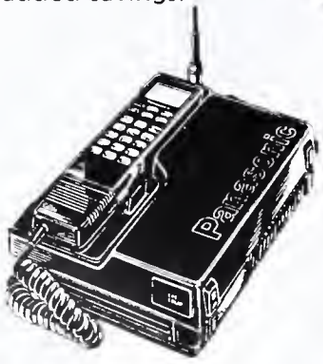
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(Continued from page 170)

causing platelet agglutination and clumping. This phenomenon is not seen with non-anticoagulated, fingerstick, capillary blood, nor with non-EDTA anticoagulants such as heparin, citrate or oxalate.

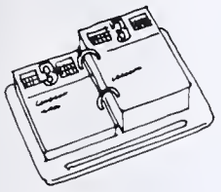
Examination of the blood smear will clearly reveal normal or adequate platelets if blood is collected without the use of EDTA, whereas massive clumped platelets are often seen in EDTA-collected blood and should alert the clinician to spurious low platelet counts reported by automated electronic counters. However, the incidence is low and varies from 0.09% to 1.9%[2]. Giant platelets, platelet cold-agglutinins, platelet satellitism, improper technique in withdrawing blood or an inadequate amount of anticoagulant can also cause pseudothrombocytopenia [2,3]. Certain drugs (mexiletine) may cause pseudothrombocytopenia[4]. Elevation of the white blood count (pseudoleucocytosis) may result from EDTA-induced platelet clumping[5].

Whether age is a factor in pseudothrombocytopenia is not clear, since four of the cases in this report were over the age of 70.

The newer automated electronic counters (Coulter S Plus KV/V, Technicon H6000) are able to display or "flag" these platelet aggregates and thereby alert one to this problem[2]. ■

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1. Shreiner DP and Bell WR: Pseudothrombocytopenia: manifestation of a new type of platelet agglutinin, *Blood:* 42:541, 1973.
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Continuing Medical Education

CALENDAR OF ACCREDITED EVENTS—CATEGORY 1

Accredited Programs of CME allow one unit of AMA credit for each hour of instruction excluding all "breaks." Some programs also are accredited for AAFP prescribed credit.

LOCAL ACCREDITED PROGRAMS

ONGOING

For a complete list of ongoing programs, please refer to the April 1989 edition of the HAWAII MEDICAL JOURNAL. Further information is available through the individual institutions or through the HMA's CME Department.

SPECIAL EVENTS

All special events should be confirmed with the CME program sponsors, as cancellations are not necessarily reported to the HAWAII MEDICAL JOURNAL.

The Hawaii Medical Association does not review or evaluate the programs listed in the Hawaii Medical Journal Continuing Medical Education column and assumes no responsibility for educational value, scientific content, changes in agenda or cancellations.

June 4-9, 1989	THE POWER OF THE ART: HUMANISM, HEALING AND HEALTH CARE, Kauai Foundation for Continuing Education and co-sponsored by the Hawaii Medical Association. Contact: Dr. David Elpern, P.O. Box 3650, Lihue, HI 96766, 808-245-3351. Location: Sheraton Kauai, Kauai.
June 29-July 7, 1989	THE SEVENTH ANNUAL CONTROVERSIES IN OBSTETRICS & GYNECOLOGY. Contact: Memorial Medical Center-University of California Irvine (MMC-UCI) Center for Health Education, 2801 Atlantic Ave. (P.O. Box 1428) Long Beach, CA 90801-1428, 213-595-3811. Location: Mauna Kea Beach Hotel, Big Island.
July 29-August 5, 1989	UPDATE IN UROGYNECOLOGY. Contact: Director MMC-UCI Center for Health Education, 2801 Atlantic Ave. (P.O. Box 1428), Long Beach, CA 90801-1428. Location: Seven-day cruise of the Hawaiian Islands.

►

July 29-August 3, 1989	PRACTICAL ORTHOPAEDIC SPORTS MEDICINE. Contact: Stuart Zeman, M.D., course chairman, 2999 Regent St., #203, Berkeley, CA 94705, 415-540-8686. Location: Hyatt Regency Waikoloa, Big Island.
August 20-23, 1989	THIRD INTERNATIONAL SYMPOSIUM ON LIPOFUSCIN AND CEROID PIGMENTS — 1989: STATE OF THE ART. Contact: E.A. Porta, M.D., Department of Pathology, School of Medicine, University of Hawaii, 1960 East-West Rd., Honolulu, HI 96822. Location: Stouffer Wailea Beach Resort, Maui.
Nov. 2-7, 1989	THE ACP-UH MKSAP VIII REVIEW COURSE. Contact: Irwin J. Schatz, M.D., Professor & Chairman, Department of Medicine, John A. Burns School of Medicine, 1960 East-West Rd., Honolulu, HI 96822, 808 548-2810. Location: Stouffer's Wailea Beach Resort, Maui.
Nov. 7-14, 1989	ANNUAL CLINICAL MEETING, DISTRICT I, THE AMERICAN COLLEGE OF OBSTETRICIANS AND GYNECOLOGISTS. Contact: Colpitts Medical Meeting Planners, 450 Providence Highway, Dedham/Boston, MA 02026-6868, 1-800-972-7777; 617-326-7800. Location: Maui and Kauai.
Dec. 24-30, 1989	ADVANCES IN MEDICINE '89. Symposia Maui, Inc. and co-sponsored by the Hawaii Medical Association. Contact: Paula Harrison, Symposia Maui, Inc., P.O. Box 833, Makawao, Maui, 96768, 808-878-6757. Location: Royal Lahaina Resort, Maui.
Jan. 22-26, 1990	8TH ANNUAL HAWAII CONFERENCE ON GASTROINTESTINAL AND HEPATIC DISEASE. The Honolulu Medical Group Research & Education Foundation and co-sponsored by the Hawaii Medical Association. Contact: Gary Glober, M.D., 1380 Lusitana St., Suite 701, Honolulu, HI 96813, 808-536-1021. Location: Hyatt Waikoloa, Big Island of Hawaii.
Feb. 19-23, 1990	HAWAII 1990: 5TH ANNUAL ADVANCES IN PRIMARY CARE MEDICINE. Pacific Institute of Continuing Medical Education and co-sponsored by the Hawaii Medical Association. Contact: Valerie Murray, P.O. Box 1059, Koloa, HI 96956, 808-742-7471. Location: Stouffer Waiohai, Kauai.
Feb. 19-23, 1990	CURRENT PROBLEMS IN CARDIOLOGY DISEASES. William L. Nietz, Division of Education, Mayo Clinic, Rochester, MN 55905, 507-284-2085. Location: Maui Marriott.

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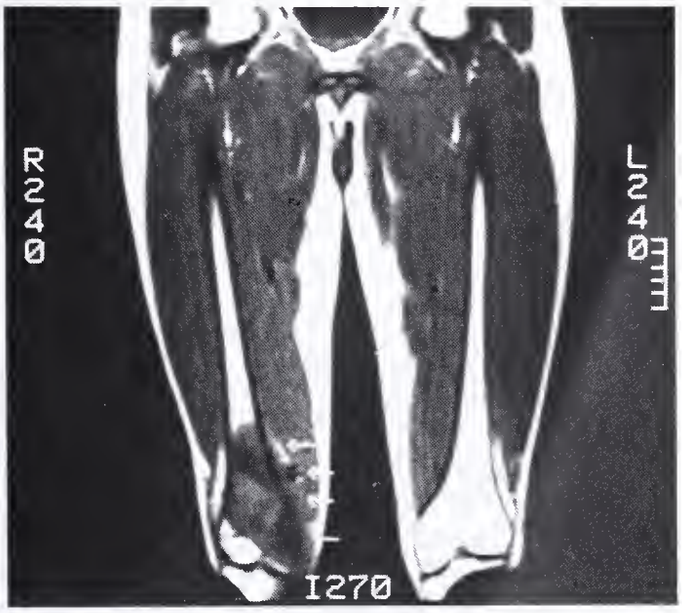


MRI CASE OF THE MONTH

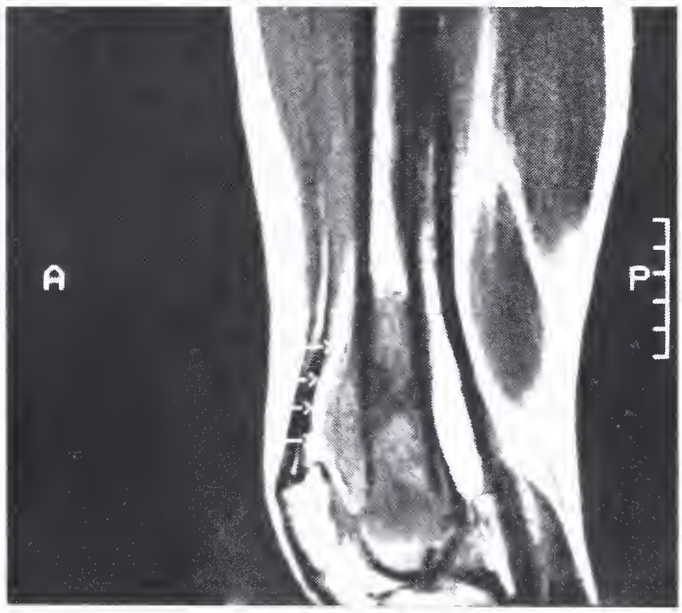
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Clinical History: 18 year old male with biopsy proven osteosarcoma

1



2



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Medical care costs of patients with AIDS in Hawaii

Frank K. Abou-Sayf, MA, MS, PhD*
James R. Marzolf, MD, MA, MPH**

(Hawaii Medical Services Association)

A study of the acquired immunodeficiency syndrome in Hawaii indicates the presence of an estimated 334 patients, 49 (14.7) of them females, between 1985 and mid-1988. Regression analysis yielded an expected count of 1200 patients by 1991, with a total cost of $50 million for care. The cost per patient was $37,035. These findings suggest that the cost of AIDS may not be as high as previously thought and that Hawaii has a relatively small share of the epidemic. An investigation of the reasons for termination of health insurance suggests that many AIDS patients resort to Medicaid for subsequent coverage. Almost half of the patients who terminated their health care coverage expired within 3 months of diagnosis. Inpatient data were obtained and compared in cities and overall nationally. These findings and their implications are discussed.

Introduction

Much interest and concern have been expressed over the financial impact of the acquired immunodeficiency syndrome (AIDS) with respect to both the victims of the disease and society in general. It is often stated that every hour someone dies of AIDS in the United States and that every 15 minutes someone is diagnosed with the disease. Estimates of the lifetime costs of a Patient With AIDS (PWA) have ranged from $27,571[1] to $147,000[2]. Other studies have produced estimates of $46,505[3] and $59,000[4].

The purpose of this study is to estimate the present and short-term future cost (and incidence) of AIDS in Hawaii and to obtain information on a number of AIDS-related issues, including the status of PWAs whose health care coverage was terminated.

Methods

Patient Selection: This study was a retrospective analysis of all medical care costs submitted for PWAs to the Hawaii Medical Services Association (HMSA) between January 1985 and June 1988.

Efforts to include all PWAs in the study entailed primary identification by AIDS-specific ICD-9-CM codes. In addition, database searches for improperly entered data such as incomplete coding and numerical transposition were made and the data corrected. A list of diseases and conditions which are rare except in their association with AIDS was also used to identify PWAs.

Calculations: Much of the data in this study was extracted from HMSA's database. HMSA has by far the largest database in the State of Hawaii, covering about half of all the State's residents. Those results obtained on HMSA's members were doubled in order to extrapolate statewide incidence and cost estimates.

Data collected include the medical care costs of PWAs in all treatment settings. The cost figures excluded research, education, testing, and indirect costs such as loss in productivity. Cases that cost $1,000 or less, though included in the total cost calculations, have been excluded in the calculation of "average" or "typical" costs. It was hypothesized that these cases were mostly new cases or cases for which only the tail end was picked up in early 1985, and that these cases would skew the data by the "front-loading" or "back-loading" effect.

In addition to the calculation and projection of the number and costs of medical treatment of PWAs, several other issues were researched. These include the analysis of PWAs' age and sex and their status in terms of survival, employment, and the sources of healthcare coverage.

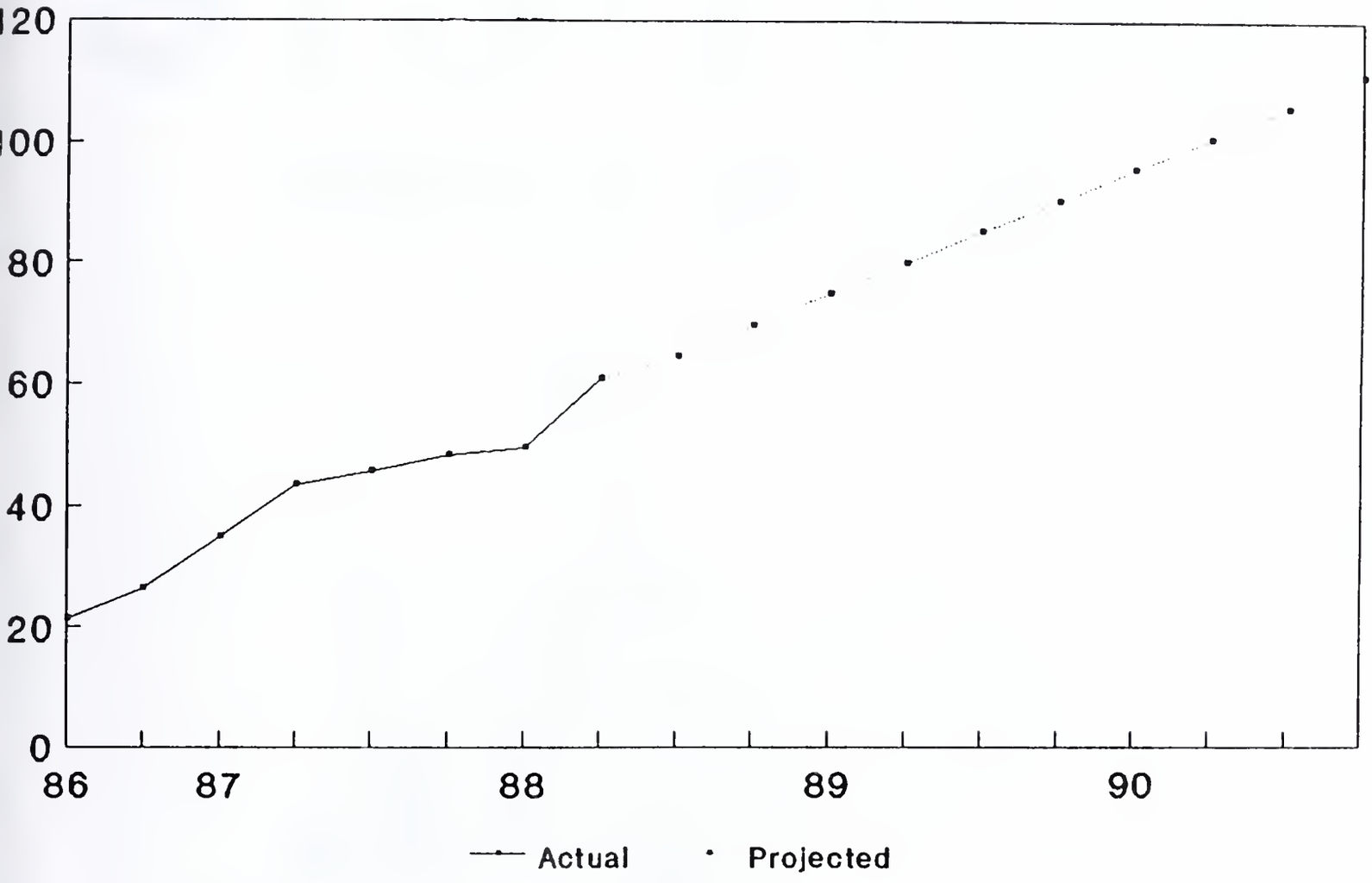
Results

Number of Patients: The estimated number of confirmed PWAs in the State of Hawaii between January 1985 and June 1988 was 334. This figure is slightly higher than that reported by the State's Department of Health, which was, as of the end of 1988, about 300 since census taking was started. It should be kept in mind that, although the reporting of AIDS cases to the State is required, the statute is not being enforced and data collection relies entirely on voluntary information.

The number of new patients identified in each calendar quarter is illustrated in Figure 1. For forecasting purposes, the

* Chief Statistician at HMSA–currently Director, Statistics and Research, Kaiser Permanente, Hawaii Region
** Medical Director at HMSA–currently Medical Advisor, USAID Jakarta, Indonesia

Figure 1



time series has been exponentially smoothed out (alpha = 0.20).

Projections: Based on the count of identified patients during the period under investigation, a projection of the number of patients was done using linear regression analysis. The results indicate that, during the year 1990, about 100 new PWAs are expected to be identified every quarter in Hawaii, and that, by 1991, the total number of patients since 1985 would exceed 1200 ($y = -2213.71 + 2.5786x$; coefficient of determination = 0.9494; standard error of estimate = 1.5756).

Patient Profile: The mean age of a PWA was found to be 37 years and the median age was 35 years. Data gathered from HMSA, Kaiser Permanente, and the State, indicated that an estimated 49 patients (14.7%) were females with the 95-percent-confidence error margin of + or - 4%. The average survival time from the quarter of diagnosis was 22 months.

Costs: The mean lifetime cost of a PWA was found to be $37,035. This figure has been adjusted for inflation and expressed in 1988 constant dollars. It was also possible to break down this amount into a number of categories of medical services that are used to treat the disease (Table 1).

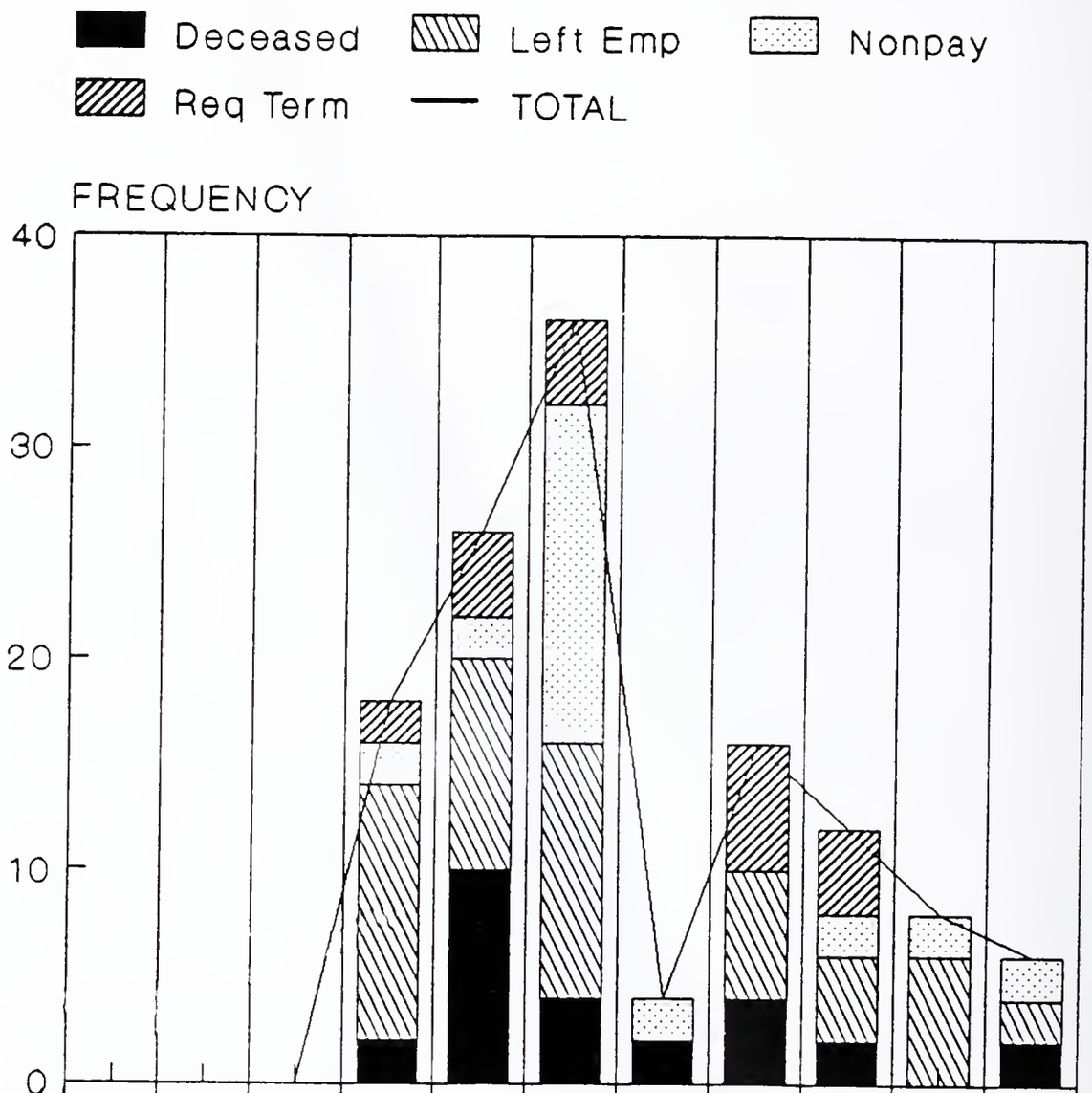
That data show that almost 59% of the total cost of care goes to facilities. Drugs, at $5,605, consume 15% of the total expenses. The mean cost per patient per year amounted to $20,200.

Projections: Based on the count and cost of existing PWAs, it is expected that the cost of treating AIDS in Hawaii would add up to $50 million by 1991 (in 1990 constant dollars). The cost per patient is expected to reach $50,000.

Healthcare Coverage: Additional insight into the behavior of PWAs was sought by tracking patients whose healthcare coverage has been cancelled. The intent was to analyze the reasons for cancellation and to estimate the survival time of this category of PWAs. There were 126 such cancellations. The various cancellation reasons have been identified by quarter and are illustrated in Figure 2. Quarter 0 is the quarter of diagnosis and may be chronologically different for different patients. No data are available prior to Quarter 0 since a patient who cancels membership prior to being diagnosed will have no record tied to AIDS whatsoever. Figure 2 shows that 2 out of 18 patients (11%) died during the quarter of diagnosis, and that 10 out of 26 (38%) died one quarter following diagnosis. This finding is an indication

►

Figure 2
MEMBERSHIP CANCELLATIONS BY REASON



X	-3	-2	-1	0	1	2	3	4	5	6	7
TOTAL	0	0	0	18	26	36	4	16	12	8	6
Req Term				2	4	4	0	6	4	0	0
Nonpay				2	2	16	2	0	2	2	2
Left Emp				12	10	12	0	6	4	6	2
Deceased				2	10	4	2	4	2	0	2

(X=0 IS PERIOD OF DIAGNOSIS)

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that some physicians tend to report the diagnosis when the disease is already at an advanced stage.

Utilization: The number of inpatient hospitalizations per patient was found to be 2.24, and the number of hospital days per inpatient stay was 15.3. The number of intensive care days per patient stay was 2.5. A comparison of these and other data with those published for San Francisco[1] and Massachusetts[3] is shown in Table 2.

Discussion

A number of findings in this study were not expected. Some projections[5] indicate that, by 1991, there will be 750,000 PWAs nationally. More conservative estimates are in the range of 365,000 by 1992[6]. About 80,000 new cases are expected in 1992[6] and 100,000 in 1993[7]. Even in comparison with the most conservative estimates, Hawaii's share of the burden of AIDS seems to be relatively low. This may be attributed to the State's diverse ethnic mixture as well as the relatively small intravenous drug abuse problem. Furthermore, recent evidence seems to indicate that a number of PWAs who moved to the islands after being diagnosed are leaving Hawaii to spend their last days back home with friends and relatives.

It should be noted that our projections are based on a relatively simple rectilinear regression model. This model represents our data with a high degree of accuracy and seems to be the most plausible model, given the limited information available at this point in time. However, competing models should not be precluded. For example, third-order polynomial or "S"-shaped models that represent rapid growth, followed by an asymptote in which additional cases become rare. The spread of AIDS could thus be a case of differential susceptibility: A genetically susceptible subpopulation is rapidly eliminated while the more resistant group subsides, suffering less morbidity and mortality, and leading to a gradual drop in the cost of the disease.

Several factors–stemming from the newness of the disease–impose serious limitations on long-term predictions related to AIDS, and severely limit the development and use of epidemiological models that use incubation and infection periods as independent variables. As the disease is being studied over a longer period of time, longitudinal information, such as patient survival time and incubation period, are constantly being revised upwards. Earlier studies estimated the incubation period at 9 to 22 months[8] while more recent ones estimated it to be 8.8 years[9]. Patient survival time, previously thought to be 7.5 months[2], was found in this study to be 22 months. The disease is rapidly evolving in terms of definition, epidemiology and treatment. The drop in the category of people infected with blood and blood products, that has been taking place in the last 3 to 4 years, is but one illustration of the changing dynamics of the disease. Finally, the wide regional variations in healthcare costs add one more wrinkle to projections. Even comparisons among studies often cannot be made with confidence, since diagnoses and other

TABLE 1
Mean Lifetime AIDS Cost by Type of Service

Service	Description	Cost $	Cost %
Medical	Office visits Hospital visits Emergency room visits Physical examinations Diagnostic services Therapeutic services Immunizations and injections Psychotherapy Supplies and materials	4,768	12.9
Surgical	Major, cosmetic and dental surgery Anesthesia	2,424	6.5
Facility*	Inpatient Outpatient Skilled nursing Home care	21,696	58.6
Labs*	Diagnostic Routine TB tests	1,480	4.0
X rays*	Diagnostic Nuclear	1,062	2.9
Drugs	AZT Take-home	5,605	15.1
TOTAL		37,035	100.0

*** Outpatient labs and X rays are included under "Labs" and "X rays" rather than under "Facility."**

TABLE 2
Comparative AIDS Inpatient Utilization

	Boston	San Francisco	Honolulu	USA
Hospital stays/patient	1.6	3.2	2.2	1.5
Hospital days/patient	33.2	34.7	36.4	31.5*
ICU days /patient	1.6	–	5.9	20
Average length of stay	21	11	16	20

*** Reported as number of patients per day per year**

criteria used to select PWAs are not usually provided.

It is unlikely that patients who request termination of their coverage (20 out of 126 or 16%, Figure 2) remain without resources to finance their medical expenses. Very often, these patients will qualify for Medicaid. The same will apply to a large portion of patients who cease to pay their dues (28 out of 126 or 21%), as well as patients who are no longer employed (52 out of 126 or 41%). This arangement leaves Medicaid with a disproportionately large share of the burden of the medical care costs of PWAs. In fact, a study by Graves [10] indicates that private insurance bears the burden of 49 to 54% of the cost of AIDS nationally, whereas Medicaid's share is 23 to 24%. In a state like Hawaii, Medicaid recipients make up 7% of the population[11]. It is estimated that 40% of all PWAs will become dependent upon Medicaid to pay their medical bills[12,13].

The fact that almost half of the patients whose health coverage had been terminated expire within 3 months of diagnosis is unlikely to be attributed to physicians' inability to diagnose the disease earlier. Rather, it seems to lend credence to the suspicion that, because of the severe social stigma and financial repercussions associated with the AIDS diagnosis, physicians tend to deliberately delay reporting the diagnosis.

A number of recent studies have suggested that the medical care cost of AIDS may be less than what was previously thought. Kaiser Permanente's average lifetime cost of care for AIDS in the Northern California region was estimated to be $35,000 between 1981 and 1987[14]. A Rand Corporation study concluded that, from 1986 to 1991, AIDS care will cost the nation about $19 billion, half the previously projected figure of $38 billion[15]. Hellinger, in an NCHSR publication, noted that the cost of AIDS is now projected to be lower than that previously predicted, in spite of the expected greater use of AZT[16]. Bloom and Carliner estimate the cost between 1981 and 1991 to be $22 billion and conclude that this amount is small compared to the total national healthcare spending during that period[17].

The relatively low cost of AIDS treatment in Hawaii stems from a number of factors. First is the relatively lower medical care cost in Hawaii: The percent increase in the Medical Care component of the Consumer Price Index in Hawaii for 1986 and 1987 was 6.2 and 4.6 respectively, compared to the national increase of 7.6 and 6.6. Also, the number of hospital days per episode and the number of admissions are both lower than expected. It may be that, in Hawaii, patients tend to be admitted only when severely ill, hence the relatively larger utilization of intensive care units as compared to that in other cities. In a recent NCHSR study, the observed lower-than-expected national cost was attributed to more outpatient services and to fewer inpatient days[16].

Another unexpected relatively low cost was that for drugs: Slightly over $5,600 between the period of diagnosis and death. It should be cautioned, however, that the trend in the use of AZT was not investigated. The relatively low drug cost observed in this study may be due to the fact that the use of AZT in 1985–the front end of our data collection period–was considerably lower than it is today. This use is likely to soar in the next few years, as medical advances succeed in prolonging PWAs' lives until more efficient remedies are found.

Perhaps the most surprising finding was the large proportion of female PWAs (14.7%) observed in this study. This finding differs considerably from those obtained nationally (8%)[6], and from previous estimates for Hawaii (4%)[18]. However, a recent study by the Mid-Atlantic Kaiser Permanente Region[19], encompassing a membership of 215,000, found that 22% of PWAs were females. Although the major cause of infection among women is intravenous drug use (52% of all cases)[6], the proportion of female PWAs is rapidly rising, and was 33% more in 1988 than in 1986[6]. The rate of infection due to homosexual contact has increased among women from 14% in 1982[20] to 29% in 1988[21]. These factors combined may lead to an increase of the disease in one age group where prevalence is not sex-related, namely infants who acquire the disease congenitally. ■

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Readers Express Their Views

In Silence there's a worth that brings no risk

Dr. Frank Weinstock, quoted in the Ocular Surgery News, reminds us that several expressions often heard in the operating room really do not belong there — heading the list is that dreaded word "oops" but additional no-nos are "sorry", "mistakes", "problems", "that's contaminated", "the machine is not working", "I'm (sick-worried-nervous-tired) today". Intent on the task at hand, we are often forgetful of just how alert the patient is, so enjoy "silence more musical than any song." (The ears hear, in sleep, under anesthesia and probably even in cardiac arrest/Ed)

There is nothing so skillfull in its own defense as imperious pride

So what do you do when you have satisfied your ambitions in the field of medicine? Write a book, what else! Charles Kelman entitled his autobio *"Through My Eyes"* and then humbly captioned it "The story of a surgeon who dared to take on the medical world." Perhaps the self-appreciative doctor belongs in that exclusive field with those who flaunt it: "If you can produce, you ain't braggin'!" Muhammad Ali, Joe Namath, Donald Trump, Sly Stallone, George Ariyoshi, and now Charles Kelman. Move over Robin Cook.

There is no distinctly native American criminal class except Congress

Whatever one may think of our Congress, it is hard to find much courage there. It is obvious that our trusted Hawaii delegation along with the rest of Congress, should receive more money for their services. $85 thou in this day is no longer a substantial income. But instead of facing the issue with honesty and integrity, they hide behind an appointed commission with a law that will take effect while they are adjourned. Speaker Wright has said that he will not call the House in early, and both houses have to vote against the commission to negate the planned action. Thus, the Senate can vote it down, and the House be unavailable to vote. Voila — no one votes for the raise, but it happens anyway. It translates to an increase of $50 thousand/year — but, boo-hoo, no honorariums! do you wonder why we cannot cut the deficit — no one in that sacred body has the guts to delete any item. It is so much easier to just raise taxes!! Please pass the pork barrel.

Crime, like virtue, has its degrees

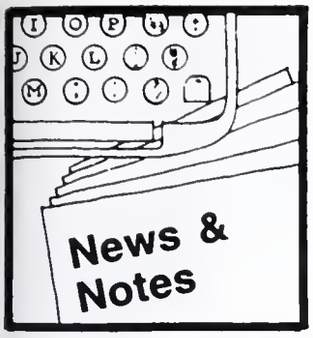
Busy, busy Mr. Kusserow and associates have investigated 600 complaints of abuse of the Medicare-Medicaid program by ophthalmologists with an additional 1,200 more under consideration. The FBI has so far been unable to substantiate any of the OIG's charges. It would appear, therefore, that for all the threats and breast beating, the gorilla so far has shown no teeth. The accusation of cheating is widespread (see Readers Digest Dec. 88), but no one has done anything. However, the *Argus* for December carried a story of Dr. Richard Levin whose Levin Eye Clinic in Ohio is that state's largest Medicare biller at $18 million over the last four years. Dr. Levin was arraigned on 328 counts of Medicare fraud. According to the complaint, the doctor was billing for procedures not perfomed, and for receiving kickbacks on IOLs. Meanwhile, HCFA was told by none other than the Supreme Court that they cannot collect retroactively to July 1, 1988, for lens implants. Previously, it was stated that a figure would be forthcoming, presumed to be $200/lens, and when all the blocks were in place, statements would go out to all those supplying IOLs, demanding appropriate reimbursement. Apparently, it ain't gonna happen.

Fear the goat from the front, the horse from the rear, and the man from all sides.

The latest summary from the National Institutes of Health indicated that of 1,408 percutaneous exposures to HIV infected blood, six apparent transmissions occurred, yielding a rate of 0.45%. Also, of 948 mucous membrane exposures to the secretions of HIV+ patients, none resulted in viral transmission, nor were there any infections among 566 household caregivers. If someone announced that 200 health care workers died last year from HIV occupational contacts, hospitals and clinics would be in a state of panic. Yet, that is precisely what happens EACH YEAR from hepatitis B infection. It should be obvious that one cannot be cavalier about AIDS, but we incur a much greater occupational risk from hepatitis B. An immunizing vaccine is available for hepatitis.

And remember . . .
All probabilities are 50%. Either a thing will happen, or it won't.
There is no job so simple that it cannot be done wrong.
The sum of the intelligence on the planet is a constant; the population is growing.
Aloha, and keep the faith.

Russell T. Stodd, MD
The Weathervane Vol. No. 2



HENRY YOKOYAMA, MD

Life in These Parts . . .

Office Memo: "Nuuanu Hale nurse called . . . Mr. M due for *resuscitation* tomorrow . . . Friday, the 3rd" (After careful thought, we surmised that the Filipino nurse had really meant "Recertification")

When "toonk toonk" is the sound of music

Jerry Kalahiki Jr., 23, became Hawaii's 4th heart-transplant patient in August last year . . . Jerry happily describes the beat of his new heart as "Toonk, toonk, toonk, toonk." Cardiologist Robert Hong says, "His post-transplantation course was very stormy . . . For the rest of his life, it'll be a fight . . ." But Jerry is philosophical, "One day at a time . . . First I want to enjoy all the time I got with my wife . . . We still got a honeymoon to go . . ."

Faces

(Foundation for Amer-Asian Children's Emergency Support)

Maui physician and psychiatrist Fred Burdle served six years with the First Cavalry Division in South Vietnam and has an 18-year-old daughter in Vung Tau. Fred is helping Wahiawa travel agent John Rogers get FACES off the ground. The organization will identify, educate, house and medicate young Amer-Asians while awaiting emigration. "I don't believe in waiting on governments. The Vietnam government has all these curves and turns. But the people need help." About 15,000 Amer-Asians remain in Vietnam and their average age is 18.

Lyme Disease

The first case of Lyme Disease (a spirochetal disease transmitted by tick and fleas) in Hawaii was diagnosed by Honolulu dermatologist Douglas Johnson in a 35-year-old woman who was last on the mainland in 1981. (How she became infected is a mystery.) The diagnosis was confirmed by the Center for Disease Control in Atlanta . . .

Picturesque Speech (KUMU traffic report)

"The traffic on the rest of H-1 townbound from Moanalua is 'virtually a parking lot' "

One of Life's Minor Victories

We dropped in to see an old friend who was recovering nicely at home after epidural abscess surgery. He proudly showed us the 8-inch scar over his cervical spine and called his wife, who was in the kitchen . . . "Honey, this is the doctor who made me quit smoking 30 years ago. . . I've been telling everyone how you took the pack of cigarettes from my shirt pocket and threw it into the waste basket." Tears quickly brimmed as he described the brusque action of a cocky know-it-all young physician so many many years ago. . .

Cocaine babies

Rodney Boychuk, neonatologist at KMCH reports a dramatic rise in "cocaine babies" in the past year (20 babies in the past six months). Rodney reports that cocaine causes a severe rise in the mother's blood pressure — basal constriction — and literally blows the placenta right off the inside of the womb. The rate of still births for cocaine-using mothers is 10 times the average. "Chronic use results in a lot of things, but even a single use can result in the death of the fetus. . . Additionally, cocaine babies are succumbing to SIDS (Sudden Infant Death Syndrome)" "From the Frying Pan" by Bill Hosokawa, Pacific Citizen, Mar. 27 '88

We gleaned the information that former Honolulu physician Teru Togasaki and her sister Dr. Kazue Togasaki were suffering from Alzheimers and "in a San Francisco nursing home where the cost is not small." They were being cared for by another physician sister, 88-year-old Dr. Yoshiye, but the burden had become too heavy. . . Teru, a John Hopkins graduate practiced in Honolulu where her special interest was volunteer work with juvenile delinquents and prison inmates. She returned to California after retirement. Friends of the ►

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Gerald Seto M.D.
Director

three unmarried physician sisters were trying to raise funds to meet the cost of the nursing-home care. (Contributions to *The Togasaki Family Fund* may be sent to the Japanese Cultural and Community Center, 1840 Sutter St., San Francisco, CA 94115)

Miscellany

The lawyer and the Pope got to heaven. St. Peter personally opened the gates to welcome the pair. St. Peter first showed the Pope his room. . . It was small and austere with a twin-size bed, vinyl floor, small dresser, and a bathroom-shower combo. In direct contrast, the lawyer was shown a large classy room with carpet, king-sized bed, Jacuzzi, etc. The Pope turned to St. Peter, "What's the big idea?" St. Peter explained, "You must understand. . . We have 200 Popes but only one lawyer." (A Ray DeHay contribution as told to MSD rep Claire Nakatsuka)

☆ ☆ ☆

St. Peter was interested in how the equal rights amendment was working out on earth. He summoned the last 1,000 men and ordered, "Those who felt they bossed their wives line up to my right and those who were bossed by their wives line up on my left. . ." There was a mad rush to line up on his right, all except for one slight figure on the left. St. Peter asked, "Well, do you feel you were bossed by your wife?" A pitiable voice replied, "I don't understand what's happening, but this is where my wife told me to stand. . ." (As told by our ever smiling ENT man, Walter Young. . .)

Professional Moves. . .

Honolulu: In August, orthopod Kenneth Kaan opened his office at Kuakini Medical Plaza, Suite 807, and endocrinologist Robert Galagan and cardiologist Roy Kamada joined the Straub Clinic. . . In September, general surgeon Mark Grief joined Werner Grebe MD Inc. offices in Aiea Medical Plaza, Suite 303, and Kuakini Medical Plaze, Suit 807. . . In October, internist Michael Mihara joined the Pearl City Medical Associates Inc. at Pearl City Medical Bldg. . . November found pediatrician Ryan Sumida joining the Children's Medical Associates Inc. at the Aiea Medical Bldg. and OB-Gyn Barbara Warkus opening her office at the First Interstate Bank Bldg., Suite 406, 1316 S. King. . . In January, ophthalmologist Tom Frissell moved from 1441 Kapiolani to join Percival Chee at Kukui Plaza Mall, Suite. C-116. . . Cardiologist Osamu Fukuyama relocated from Suite 810 to Suite 504, Kuakini Medical Plaza. . .

Big Island In December, neurologist Robert Hinman opened at the Central Kona Center Bldg., Kealalakua, Hawaii. . .

Wahiawa FP Timothy Wee, 83, retired after 53 years in practice. He looks back on his career and has no regrets. Faithful patients, some of whom have been with him for 30, 40 and even 50 years, came in with tears to wish him well. Timothy remembers the days when money was tight and they had to pay with vegetables from their gardens. . . But if he were a young man today looking for a profession, he would not choose doctoring. . . "There are a lot of good doctors, but there are too many. . . And too many lawyers. . . The market is flooded. . . We don't need any more. The times have made the profession what it is today. . . Higher fees, not the feeling in the patient-doctor relationship like when I started," Timothy reminisces. . .

Lecture Humor. . .

re Snoring: "One of the most prevalent of obnoxious human habits."
"Laugh and the world laughs with you. . . Snore and you sleep alone. . ."
"There are social as well as medical problems a/c snoring. . ."
(From Ed Morgan's lecture on snoring. . .)

Conference Notes:

"Screening for Colon CA." Superb lecture by Gastroenterologist Gerald Hiatt Feb. 24 at Mabel Smyth. . .

Incidence:

138,000 cases will occur this year. . . Mass screening has increased five-year survival from 40% to 85%. . .

Overall five-year survival 40% (A + B = 80%; C + D = 30%)

Most common CA in women and men and preventable. . .

Etiology:

High-fat and low-fiber diet. . . In Hawaii, equal incidence among Caucasians, Japanese and Chinese. . . Hawaiians are a paradox. . .

Epidemiology:

30% of autopsy specimens have polyps. . . After age 60, 60% have polyps. . .

10% of all polyps have CA. . .

Distribution:

Colon CA is moving to the right colon. . . Up to 25 cm 9%; up to 60 cm 66%. . .

Rectum: 25% of all CA. . .

Diagnosis: Risk factors:

a. Age: Increases after 40; After age 65, 67% have polyps

b. Polyps: All CA from polyps
Histology:
Tubular adenoma: 8% chance of CA
Villous adenoma: 20%
Mixed adenoma: 13%
Hyperplastic adenoma: 0%
Sessile: more CA; Distal: more CA
Size: Less than 1 cm: 1% CA; 1-2 cm: 10% CA; more than 2 cm: 50% CA

c. Prior colon CA

d. Genetic Factors: Family CA Syndrome; Familial Polyposis

e. IBD: UC: Increased risk for pancolitis after seven years;
Increased risk for Lt colitis after 15 years.

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NOTICES & ANNOUNCEMENTS

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Member classified notices are run in the HAWAII MEDICAL JOURNAL, free of charge, on a space available basis. Content must pertain to medical practice, office equipment or help wanted. Ad copy must be sent to Association Office, typewritten, on office letterhead (or with doctor's name and phone number for reference).

Crohn's: Risk 20 times normal population

f. Female genital and breast CA

Screening Techniques:

Average risk, after age 40; High risk, after age 20

Methods: Occult blood; FOP (Fiberoptic procto)

Recommendations for screening:

Test for o.b. every year; FOP q 3-5 years (60 cm by trained endoscopist; 30 cm by primary care MD)

BE may be useful for screening asymptomatic patients with positive family history. . . False negatives in 25%-40%. . .

Colonoscopy for aymptomatic/high risk patients; prior polyps/CA; occult blood positive and IBD screening.

Screening—Summary:

All adults over 40: o.b. q 6 mos. to 1 year; FOP q 3-5 years

High risk groups: start at age 20

Positive o.b. or blood mixed with stool — do colonoscopy

Follow-up:

1. Solitary polyp (Becomes CA in 5 - 15 years) If colonoscopy adequate, repeat q 3 years or o.b. yearly

2. Large villous polyp; multiple polyps or CA in situ: Repeat colonoscopy in 1 year; then q 3 years or o.b. yearly

3. Villous adenoma, short stalk: colonoscopy q 6 mos,; surgery if recurrence.

4. Sessile villous adenoma: Resection

5. Minimally invasive CA: Polypectomy OK if:
 a. CA confined to head;
 b. Resection margin free of tumor;
 c. Well differentiated CA;
 d. No lymphocytic invasion
 e. Anything else: resection

Summary:

a. Colon CA is the most common CA in both women and men

b. Prevention: Low-fat, high-fiber diet

c. Screening: Asymtomatic patients with O.B. and FOP (5-year survival has increased from 40% to 85%)

d. Screen all patients over 40 with O.B. yearly and FOP q 3-5 years (High risk patients, start at age 20)

e. O.B. positive or blood mixed with stool: do colonoscopy

f. Follow-up after adenomatous polyp: yearly O.B. or colonoscopy q 3 years

g. Follow-up after CA—check resection lines at 6 months, I year, then q 3 years.

Conference Quips

Gerald Hiatt re the surge of screening for colon CA in the wake of President Reagan's colonic polyps: "Never in my life had so many volunteered for proctos. . . We need another figure. . . Perhaps the Ayatolla. . ."

Radiologist David Sakuda re the increased incidence of colon CA at KMC in 1987 following Reagan's colon CA: "We were doing five to 10 BEs a day. Everyone wanted an enema. . .

Scott Hundahl on the recent success of screening mammograms: "The latest figures show that breast CA is the No. 1 cancer in Hawaii. . ."

Oncology Dialogue

A 73-year-old woman had lung mets from a primary squamous cell Ca of the nasopharynx . . . A solitary lung nodule had been resected three years earlier . . . Moderator Glenn Kokame asked, "Stemmy, can you comment about the etiology and epidemiology of nasopharyngeal CA?" Stemmy: "This is a South China tumor. . . Two other endemic areas are the Alaskan natives and Tunisian nomads. . . . The virus is genetically related to the Epstein Barr virus. Exposure to nitroso compounds since infancy is a factor. . . The Chinese diet of a mush of dried fish is suspect. . ." Glenn: "Don't the Chinese in Hawaii eat this mush?" Stemmy: "The Chinese in Hawaii have a higher incidence of this tumor than other racial groups, especially Chinese from Kwantung Province. . ." Glenn presented the following research data from Taiwan:

1958-73	Stage I	II	III	IV	Overall Survival
Xray Rx	72.2%	56.9%	32.2%	0	43.5%
1974-78					
Split Care ie Xray or Chemo Rx	79%	63.2%	43.6%	0	56.0%
1979-84					
Chemo and Xray Rx	95.5%	84.5%	60%	0	70.6%

"Chemo therapy included Cis Platinum and Bleomycin"

Sportsmen

Honolulu orthopod Allen Richardson is chairman of the Sports Medicine Committee for U.S. Swimming. Allen says, "The practice of using performance-enhancing drugs goes beyond the boundaries of intellect. . . It seems that even after you've explained the pros and cons of anabolic steroids — their potential health hazards — many are going to use them anyway."

Marathoner Jack Scaff is the first Hawaii resident to be invited to judge the World Championship Chili Cook-off at Tropico Goldmine, Calif. . . . (Don Chapman)

Golf Quips. . .

"I'm hitting the woods just great, but I'm having a terrible time getting out of them." (Golf Pro Harry Toscano)

A player blasted out of a third-hole trap onto the green at Pittsburgh's Oakmont Golf Course. But by the cup he found only an alluring young golfer — his ball was no where to be seen. "Did a ball just roll up here?" he inquired.

"Search me," replied the girl.

"Swell, but first let's find my ball."

(From Stan McDougal's "The World's Greatest Golf Jokes")

Oncology Dialogue. . .

A 20-year-old woman had esophagectomy with primary anastamosis for leiosarcoma of the esophagus by surgeon S.K. Liao. . . Moderator Glenn Kokame intoned: "I've looked up the figures for esophageal CA. . . Squamous 91%; AdenoCA 7%; Sarcoma 2%. . . Proximal esophagus: 40%; mid esophagus: 50%; distal esophagus: 10%. . . Treatment of choice is surgery. . . Intrathoracic stomachs have trouble, but stomachs left below the diaphragm do well. . ."

Glenn turned to radiotherapist Ed Quinlan: "Is radiation indicated?" Ed was informative: "Adequate radiation will require 6500 rads. Unfortunately with the heart and other structures, it will be technically impossible to give such a dose. . ." "Gordon, how about chemotherapy?" queried Glenn . . . Gordon Nakano was quite reticent: "In this case, no!" Moderator Glenn inquired about possible laser therapy. . . Gastroenterologist Mark Yoshida was skeptical: "Where I trained, the thoracic surgeons use laser in these cases. I heard of one case in which the aorta was penetrated and the patient exsanguinated." Radiotherapist Vince Brown added, "I have seen a case of tracheoesophageal fistula caused by laser therapy."

Miscellany

The kindergarten teacher had a very bright student in her class whom she felt should be promoted. She went to see the principal who asked her to test him. . . "Now Jimmy, what do I have two of that a cow has four." "Legs" he replied. "What do you have in your pants which I have none of?" "Pockets." The principal looked embarassed as he suggested Jimmy be promoted to fifth grade. . . "I missed those two questions," he confessed. . . (Heard at a Patrick O'Dooley seminar by our banker friend. . .) ►

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The two brothers, ages 4 and 5, decided one morning that they were old enough to use cuss words like the grownups. . . The 5-year-old declared, "I'm going to use the word 'Damn' " and the younger brother, not be outdone, said "I'm using 'Ass.' " So they went down to breakfast. Mom asked, "Well, son, what will you have for breakfast?" "I guess I'll have some of those damn corn flakes!" Mom was flabbergasted and slapped him on the face. . . She turned to the brother and said, "What will you have?" He replied, "Well, you can bet your ass I won't ask for those corn flakes. . ." (As related by John Howitt, our favorite Dista rep)

Elected, Honored & Appointed . . .

In October, the Straub Foundation awarded the 1988 second annual "Guy Champion Milnor Professional Activities Award" to Fred Gilbert Jr. The 1987 award recipient was Frances Pien. . .

Ann Catts, chief of QMC Pathology Dept. received an honorary doctor of laws degree from the University of Delaware. . .

Orthopedic resident Michael Pearl was awarded the Vernon P. Thompson Award for his research paper introducing a new concept of shoulder motion. . .

A Honolulu Advertiser editorial lauded retiring Liquor Commission Chairman John Edwards: "For some 2½ years, Dr. John Edwards has been a good person in a demanding situation. . . His efforts have been impressive in dealing with allegations of misconduct and possible criminal acts by the commission staff."

QMC Housestaff Alumni Reunion

Notes Therefrom . . . (March 4 and 5 . . . Co-chaired by Max Botticelli and Ann Catts . . .)

Aloha Reception at Honolulu Art Academy. . . No host cocktails. . . Heavy pupus (gourmet delights with sushi bar, salmon, shrimp, lobster, meat sticks, etc.)

Program started at 7:30 p.m. in the spacious basement auditorium where Ann Catts held court as MC. . . Jim Stewart honored Richard Frankel, Ralph Cloward, Judson McNamara and Tom Whelan for their outstanding roles in housestaff teaching. . . Myron Shirasu gave a slide narrative on the contrasts then and now (e.g. QMC organization then consisted of a board of trustees headed by E.E. Black and an administrator — the present organization required two separate slides just to show all the VPs) . . . Aerial photographs of QMC then and now brought back many memories. . .

Ann called on former housestaff members for their favorite anecdotes . . . Gabe Ma recalled how he got the visiting professor programs started with the backing of Rogers E. Hill. . . Ted Tseu saw a patient of the legendary Joe Strode in the ER at 3 a.m. with appendicitis. . . Joe was a still a vigorous 78, but Ted decided to call Gil Freeman instead. Gil gently informed Ted that Joe preferred to take care of his own patients. Joe promptly arrived at the ER, examined the patient, and forthwith ordered the patient prepped for surgery. The anesthesia was complete in 30 seconds. . . Joe raised his scapel — the first stroke went deftly through the skin, fascia, rectus muscle — the second stroke parted the peritoneum and out popped the appendix. Joe was in and out in a total elapsed surgery time of 10 minutes flat . . . Fastidious Dick Sakimoto was critical of everyone, i.e. the nurses, the housestaff and his colleagues . . . all except Jimmy Wong for whom he had a few kind words . . . After three years of OB-Gyn residency, all was forgiven when on the last New Year's that fireworks were unrestricted, Dick invited the entire housestaff to his country home and burned $300 worth of fireworks. . .

Ann Catts recalled her first scrub with Joe Strode. As she scrubbed next to Joe, she thought she heard Joe mutter, "You know, I'm of the old school. . . I don't believe women belong in medicine. . ." Joe's guttural voice was muffled by the surgical mask and she was spared the full impact of Joe's remark till much later. . . Years later, he did relent and complimented her on her progress. . .

With such anecdotes about Joe Strode rife, Jim Marnie came to his defense. . . "In Joe's ►

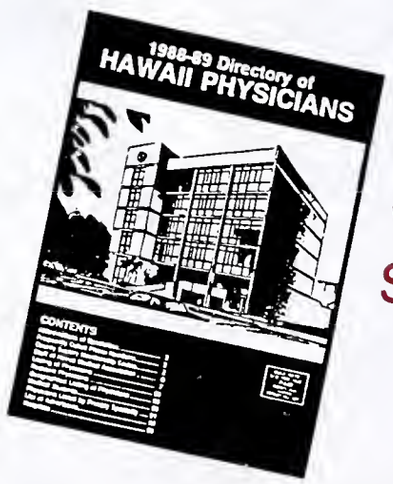
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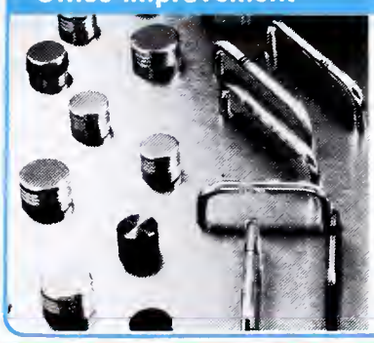
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parlance, a gastric ulcer was carcinoma until proven otherwise and had to come out. . . Joe was intense about his surgery. . . I soon learned that a 7 a.m. surgery was at 7 and not 7:30. . . Sure learned a lot. . .'' Jim also described Rogers E. Hill and Charley Judd as two of the greatest teachers Queen's ever had. . .

Norma Sneed, our delightful humorist from Oklahoma (who drawls ''I'm small, so I married a Small—so I'm still Small'') got up to the podium. . . ''I had to get up to speak. . . otherwise my trip here would not be deductible. . . I bring greetings from East Oklahoma. . . The latest joke on the U of Oklahoma campus is that the football team must be on the honor roll. . . Recently the team members had to appear before a judge on a misconduct case. . . Each player kept repeating, ''Yes, your Honor. . . No, your Honor. . .'' Norma recalls a pet cat named Fidel that lived in their intern quarters. Fidel suffered a broken hip and was being attended to by the whole housestaff when Fidel delivered a litter of kittens. . . So it turned out that Fidel was not Fidel after all. . .

Oncology Dialogue

A 72-year-old woman had a subtotal gastrectomy for a very early gastric CA. . . Pathologist Larry McCarthy showed tissue slides with signet ring cells. . . Grant Stemmerman pointed out the layer of healing epithelial cells over the tumor cells demonstrating that even gastric CA craters can heal. . . Moderator Glenn Kokame asked, ''Is this Stage I?'' Stemmy: ''Stage I has a 98% survival.'' In the ensuing discussion of subtotal gastrectomies, Stemmy reported that post-op patients usually have weight loss, low cholesterol and serum protein levels. . . When several surgeons refuted his statement, Stemmy reported that ''we have 600 subtotal gastrectomies on record and the average weight loss is 8 kg with low cholesterol and serum proteins. . .'' Glenn defensively pointed out that we don't have too much dumping locally. . . Surgeons Bob Oishi and S.K. Liao concurred. . . Larry asked, ''How about follow-up on this patient?'' When Glenn suggested EGDs in three months and six months thereafter, Stemmy spoke his mind: ''Oh, no! she's cured. . . At age 72, I wouldn't do anything, especially at $600 per EGD. Even colonscopy is being overdone in post-op colon CA cases. . . Glenn turned to radiologist Don Ikeda: How about UGIs every two or three years?'' Don replied, ''We don't have any definite guidelines. . .''

A 69-year-old woman who recently had surgery for rectal CA has a history of multiple carcinomas. In 1976, she had hysterectomy for uterine CA. In 1982, she had a modified radical for Rt breast CA. In 1984, she had partial Lt nephrectomy for hypernephroma and a low resection for a rectal CA. In 1987, she had recurrence of her breast CA and was placed on Tamoxifen. Pathologist Larry MCarthy described the most recent rectal CA as a Duke's A. Pathologist Grant Stemmerman commented: ''This case exemplifies one of the problems following radiation Rx. . .'' Radiotherapist Ed Quinlan reported: ''I have another such case following radiation of the cervix. . .'' Fellow radiotherapist Charley Yamashiro disagreed: ''I don't think this CA is related to radiation. . . Sarcomas are related to radiation, but not adenoCAs. . . Stemmy argued, ''AdenoCAs are related to radiation proctitis. . .''

Moderator Glenn intervened: ''It's interesting that the patient has so many primary adenoCAs. . .'' Stemmy punned: ''She's her own cancer center. . . She is the type of patient geneticists are interested in re genetic translocation problems. . .'' Glenn inquired: ''How do we follow this patient. CEAs or scans?'' Nuclear med man Dick Wasnick reported: ''A combination of CEAs and liver scans.'' Glenn: ''How about a bone scan?'' Dick: ''Probably not. The best follow-up will be a rectal exam. . .''

Travel Hints. . . (Abstracts from Honolulu Star-Bulletin reporter Jeanne Ambrose's article)

Honolulu FP Sandra Penn advises her patients to put just a tad of vaseline, Neosporin or Bacitracin oitment up their nose before boarding a plane to ward off cold and flu viruses. . . Her theory is that the jelly protects the mucus membrane of the nose from drying and cracking during the dehydrating in-flight atmoshpere. . .

James Pearce, director of the Sleep Disorders Center at Straub advises travelers who missed some sleeping time during the flight not to take a nap when arriving at their destination. ''The big mistake people make, I think, is to crash for the first day. That usually prolongs the effects of jet lag and you feel worse. . . Instead you should sleep when it's sleeping time there. On the first morning after you arrive, get out in the bright sunlight and do some gentle exercise. That'll help regulate the body clock in your brain more than anything. . . One of the things that jet lag affects, particularly on eastward flights is your decision-making process. . .''

Tips on how to minimize the effects of jet lags:

Don't take the ''red eye'' or all-night flight, unless you can really sleep on the plane. . .

Take a flight that ends up getting at your destination about bedtime. . .

Avoid alcohol on flights. It is a big disturber of sleep. Although a drink may help you sleep initially, once the effect wears off you may be more wide awake than ever.

Try to reset your internal clock gradually to the time zone of your destination. When it's 11 p.m. in New York, it's only 6 p.m. in Hawaii. You can prepare yourself by going to bed earlier in Hawaii, so you'll be able to fall asleep at bedtime in New York. . .

Don't worry about adopting a special diet before you fly because there is little evidence that it has any effect. . . However it helps to eat lightly. Overeating will only add to the feeling of sluggishness on arrival at your destinations. . . ■

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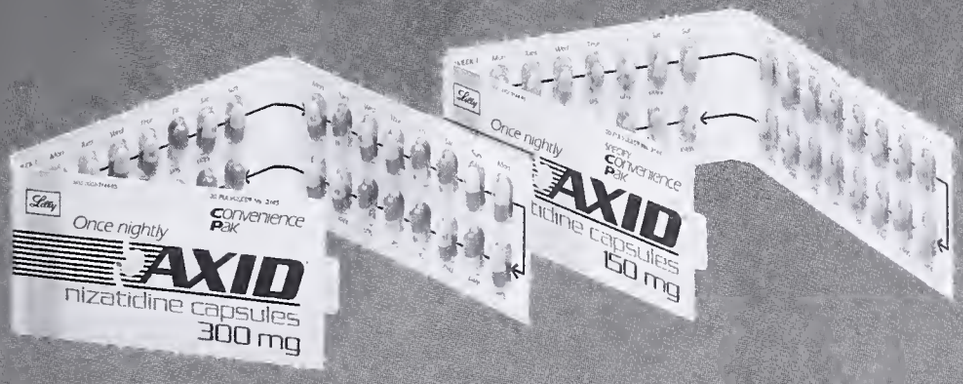
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Brief Summary

Consult the package literature for complete information.

Indications and Usage. Axid is indicated for up to eight weeks for the treatment of active duodenal ulcer. In most patients, the ulcer will heal within four weeks.

Axid is indicated for maintenance therapy for duodenal ulcer patients at a reduced dosage of 150 mg h.s. after healing of an active duodenal ulcer. The consequences of continuous therapy with Axid for longer than one year are not known.

Contraindication: Axid is contraindicated in patients with known hypersensitivity to the drug and should be used with caution in patients with hypersensitivity to other H_2-receptor antagonists.

Precautions: *General* — 1. Symptomatic response to nizatidine therapy does not preclude the presence of gastric malignancy.

2. Because nizatidine is excreted primarily by the kidney, dosage should be reduced in patients with moderate to severe renal insufficiency.

3. Pharmacokinetic studies in patients with hepatorenal syndrome have not been done. Part of the dose of nizatidine is metabolized in the liver. In patients with normal renal function and uncomplicated hepatic dysfunction, the disposition of nizatidine is similar to that in normal subjects.

Laboratory Tests — False-positive tests for urobilinogen with Multistix® may occur during therapy with nizatidine.

Drug Interactions — No interactions have been observed between Axid and theophylline, chlordiazepoxide, lorazepam, lidocaine, phenytoin, and warfarin. Axid does not inhibit the cytochrome P-450-linked drug-metabolizing enzyme system; therefore, drug interactions mediated by inhibition of hepatic metabolism are not expected to occur. In patients given very high doses (3,900 mg) of aspirin daily, increases in serum salicylate levels were seen when nizatidine, 150 mg b.i.d., was administered concurrently.

Carcinogenesis, Mutagenesis, Impairment of Fertility — A two-year oral carcinogenicity study in rats with doses as high as 500 mg/kg/day (about 80 times the recommended daily therapeutic dose) showed no evidence of a carcinogenic effect. There was a dose-related increase in the density of enterochromaffin-like (ECL) cells in the gastric oxyntic mucosa. In a two-year study in mice, there was no evidence of a carcinogenic effect in male mice; although hyperplastic nodules of the liver were increased in the high-dose males as compared with placebo. Female mice given the high dose of Axid (2,000 mg/kg/day, about 330 times the human dose) showed marginally statistically significant increases in hepatic carcinoma and hepatic nodular hyperplasia with no numerical increase seen in any of the other dose groups. The rate of hepatic carcinoma in the high-dose animals was within the historical control limits seen for the strain of mice used. The female mice were given a dose larger than the maximum tolerated dose, as indicated by excessive (30%) weight decrement as compared with concurrent controls and evidence of mild liver injury (transaminase elevations). The occurrence of a marginal finding at high dose only in animals given an excessive and somewhat hepatotoxic dose, with no evidence of a carcinogenic effect in rats, male mice, and female mice (given up to 360 mg/kg/day, about 60 times the human dose), and a negative mutagenicity battery are not considered evidence of a carcinogenic potential for Axid.

Axid was not mutagenic in a battery of tests performed to evaluate its potential genetic toxicity, including bacterial mutation tests, unscheduled DNA synthesis, sister chromatid exchange, mouse lymphoma assay, chromosome aberration tests, and a micronucleus test.

In a two-generation, perinatal and postnatal fertility study in rats, doses of nizatidine up to 650 mg/kg/day produced no adverse effects on the reproductive performance of parental animals or their progeny.

Pregnancy — Teratogenic Effects — Pregnancy Category C — Oral reproduction studies in rats at doses up to 300 times the human dose and in Dutch Belted rabbits at doses up to 55 times the human dose revealed no evidence of impaired fertility or teratogenic effect, but, at a dose equivalent to 300 times the human dose, treated rabbits had abortions, decreased number of live fetuses, and depressed fetal weights. On intravenous administration to pregnant New Zealand White rabbits, nizatidine at 20 mg/kg produced cardiac enlargement, coarctation of the aortic arch, and cutaneous edema in one fetus and at 50 mg/kg it produced ventricular anomaly, distended abdomen, spina bifida, hydrocephaly, and enlarged heart in one fetus. There are, however, no adequate and well-controlled studies in pregnant women. It is also not known whether nizatidine can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Nizatidine should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers — Studies conducted in lactating women have shown that < 0.1% of the administered oral dose of nizatidine is secreted in human milk in proportion to plasma concentrations. Caution should be exercised when administering nizatidine to a nursing mother.

Pediatric Use — Safety and effectiveness in children have not been established.

Use in Elderly Patients — Ulcer healing rates in elderly patients are similar to those in younger age groups. The incidence rates of adverse events and laboratory test abnormalities are also similar to those seen in other age groups. Age alone may not be an important factor in the disposition of nizatidine. Elderly patients may have reduced renal function.

Adverse Reactions: Clinical trials of nizatidine included almost 5,000 patients given nizatidine in studies of varying durations. Domestic placebo-controlled trials included over 1,900 patients given nizatidine and over 1,300 given placebo. Among reported adverse events in the domestic placebo-controlled trials, sweating (1% vs 0.2%), urticaria (0.5% vs < 0.01%), and somnolence (2.4% vs 1.3%) were significantly more common in the nizatidine group. A variety of less common events was also reported; it was not possible to determine whether these were caused by nizatidine.

Hepatic — Hepatocellular injury, evidenced by elevated liver enzyme tests (SGOT [AST], SGPT [ALT], or alkaline phosphatase), occurred in some patients and was possibly or probably related to nizatidine. In some cases, there was marked elevation of SGOT, SGPT enzymes (greater than 500 IU/L) and, in a single instance, SGPT was greater than 2,000 IU/L. The overall rate of occurrences of elevated liver enzymes and elevations to three times the upper limit of normal, however, did not significantly differ from the rate of liver enzyme abnormalities in placebo-treated patients. All abnormalities were reversible after discontinuation of Axid.

Cardiovascular — In clinical pharmacology studies, short episodes of asymptomatic ventricular tachycardia occurred in two individuals administered Axid and in three untreated subjects.

CNS — Rare cases of reversible mental confusion have been reported.

Endocrine — Clinical pharmacology studies and controlled clinical trials showed no evidence of antiandrogenic activity due to Axid. Impotence and decreased libido were reported with equal frequency by patients who received Axid and by those given placebo. Rare reports of gynecomastia occurred.

Hematologic — Fatal thrombocytopenia was reported in a patient who was treated with Axid and another H_2-receptor antagonist. On previous occasions, this patient had experienced thrombocytopenia while taking other drugs. Rare cases of thrombocytopenic purpura have been reported.

Integumental — Sweating and urticaria were reported significantly more frequently in nizatidine- than in placebo-treated patients. Rash and exfoliative dermatitis were also reported.

Hypersensitivity — As with other H_2-receptor antagonists, rare cases of anaphylaxis following administration of nizatidine have been reported. Because cross-sensitivity in this class of compounds has been observed, H_2-receptor antagonists should not be administered to individuals with a history of previous hypersensitivity to these agents. Rare episodes of hypersensitivity reactions (eg, bronchospasm, laryngeal edema, rash, and eosinophilia) have been reported.

Other — Hyperuricemia unassociated with gout or nephrolithiasis was reported. Eosinophilia, fever, and nausea related to nizatidine administration have been reported.

Overdosage: Overdoses of Axid have been reported rarely. The following is provided to serve as a guide should such an overdose be encountered.

Signs and Symptoms — There is little clinical experience with overdosage of Axid in humans. Test animals that received large doses of nizatidine have exhibited cholinergic-type effects, including lacrimation, salivation, emesis, miosis, and diarrhea. Single oral doses of 800 mg/kg in dogs and of 1,200 mg/kg in monkeys were not lethal. Intravenous median lethal doses in the rat and mouse were 301 mg/kg and 232 mg/kg respectively.

Treatment — To obtain up-to-date information about the treatment of overdose, a good resource is your certified regional Poison Control Center. Telephone numbers of certified poison control centers are listed in the *Physicians' Desk Reference (PDR)*. In managing overdosage, consider the possibility of multiple drug overdoses, interaction among drugs, and unusual drug kinetics in your patient.

If overdosage occurs, use of activated charcoal, emesis, or lavage should be considered along with clinical monitoring and supportive therapy. Renal dialysis for four to six hours increased plasma clearance.

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Contraindications: VASOTEC® (Enalapril Maleate, MSD) is contraindicated in patients who are hypersensitive to this product and in patients with a history of angioedema related to previous treatment with an ACE inhibitor.

Warnings: *Angioedema.* Angioedema of the face, extremities, lips, tongue, glottis, and/or larynx has been reported in patients treated with ACE inhibitors, including VASOTEC. In such cases, VASOTEC should be promptly discontinued and the patient carefully observed until the swelling disappears. In instances where swelling has been confined to the face and lips, the condition has generally resolved without treatment, although antihistamines have been useful in relieving symptoms. Angioedema associated with laryngeal edema may be fatal. **Where there is involvement of the tongue, glottis, or larynx likely to cause airway obstruction, appropriate therapy, e.g., subcutaneous epinephrine solution 1:1000 (0.3 mL to 0.5 mL), should be promptly administered.** (See ADVERSE REACTIONS.)

Hypotension: Excessive hypotension is rare in uncomplicated hypertensive patients treated with VASOTEC alone. Heart failure patients given VASOTEC commonly have some reduction in blood pressure, especially with the first dose, but discontinuation of therapy for continuing symptomatic hypotension usually is not necessary when dosing instructions are followed, caution should be observed when initiating therapy (See DOSAGE AND ADMINISTRATION.) Patients at risk for excessive hypotension, sometimes associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death, include those with the following conditions or characteristics: heart failure, hyponatremia, high-dose diuretic therapy, recent intensive diuresis or increase in diuretic dose, renal dialysis, or severe volume and/or salt depletion of any etiology. It may be advisable to eliminate the diuretic (except in heart failure patients), reduce the diuretic dose, or increase salt intake cautiously before initiating therapy with VASOTEC in patients at risk for excessive hypotension who are able to tolerate such adjustments. (See PRECAUTIONS, *Drug Interactions* and ADVERSE REACTIONS.) In patients at risk for excessive hypotension, therapy should be started under very close medical supervision and such patients should be followed closely for the first two weeks of treatment and whenever the dose of enalapril and/or diuretic is increased. Similar considerations may apply to patients with ischemic heart disease or cardiovascular disease in whom an excessive fall in blood pressure could result in a myocardial infarction or cerebrovascular accident. If excessive hypotension occurs, the patient should be placed in supine position and, if necessary, receive an intravenous infusion of normal saline. A transient hypotensive response is not a contraindication to further doses of VASOTEC, which usually can be given without difficulty once the blood pressure has stabilized. If symptomatic hypotension develops, a dose reduction or discontinuation of VASOTEC or concomitant diuretic may be necessary.

Neutropenia/Agranulocytosis: Another ACE inhibitor, captopril, has been shown to cause agranulocytosis and bone marrow depression, rarely in uncomplicated patients but more frequently in patients with renal impairment, especially if they also have a collagen vascular disease. Available data from clinical trials of enalapril are insufficient to show that enalapril does not cause agranulocytosis at similar rates. Foreign marketing experience has revealed several cases of neutropenia or agranulocytosis in which a causal relationship to enalapril cannot be excluded. Periodic monitoring of white blood cell counts in patients with collagen vascular disease and renal disease should be considered.

Precautions: *General. Impaired Renal Function:* As a consequence of inhibiting the renin-angiotensin-aldosterone system, changes in renal function may be anticipated in susceptible individuals. In patients with severe heart failure whose renal function may depend on the activity of the renin-angiotensin-aldosterone system, treatment with ACE inhibitors, including VASOTEC, may be associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death.

In clinical studies in hypertensive patients with unilateral or bilateral renal artery stenosis, increases in blood urea nitrogen and serum creatinine were observed in 20% of patients. These increases were almost always reversible upon discontinuation of enalapril and/or diuretic therapy. In such patients, renal function should be monitored during the first few weeks of therapy.

Some patients with hypertension or heart failure with no apparent preexisting renal vascular disease have developed increases in blood urea and serum creatinine, usually minor and transient, especially when VASOTEC has been given concomitantly with a diuretic. This is more likely to occur in patients with preexisting renal impairment. Dosage reduction and/or discontinuation of the diuretic and/or VASOTEC may be required.

Evaluation of patients with hypertension or heart failure should always include assessment of renal function. (See DOSAGE AND ADMINISTRATION.)

Hyperkalemia. Elevated serum potassium (> 5.7 mEq/L) was observed in approximately 1% of hypertensive patients in clinical trials. In most cases these were isolated values which resolved despite continued therapy. Hyperkalemia was a cause of discontinuation of therapy in 0.28% of hypertensive patients. In clinical trials in heart failure, hyperkalemia was observed in 3.8% of patients, but was not a cause for discontinuation.

Risk factors for the development of hyperkalemia include renal insufficiency, diabetes mellitus, and the concomitant use of potassium-sparing diuretics, potassium supplements, and/or potassium-containing salt substitutes, which should be used cautiously, if at all, with VASOTEC. (See *Drug Interactions.*)

Surgery/Anesthesia. In patients undergoing major surgery or during anesthesia with agents that produce hypotension, enalapril may block angiotensin II formation secondary to compensatory renin release. If hypotension occurs and is considered to be due to this mechanism, it can be corrected by volume expansion.

Information for Patients.

Angioedema. Angioedema, including laryngeal edema, may occur especially following the first dose of enalapril. Patients should be so advised and told to report immediately any signs or symptoms suggesting angioedema (swelling of face, extremities, eyes, lips, tongue, difficulty in swallowing or breathing) and to take no more drug until they have consulted with the prescribing physician.

Hypotension. Patients should be cautioned to report lightheadedness especially during the first few days of therapy. If actual syncope occurs, the patients should be told to discontinue the drug until they have consulted with the prescribing physician.

All patients should be cautioned that excessive perspiration and dehydration may lead to an excessive fall in blood pressure because of reduction in fluid volume. Other causes of volume depletion such as vomiting or diarrhea may also lead to a fall in blood pressure; patients should be advised to consult with the physician.

Hyperkalemia. Patients should be told not to use salt substitutes containing potassium without consulting their physician.

Neutropenia. Patients should be told to report promptly any indication of infection (e.g., sore throat, fever) which may be a sign of neutropenia.

NOTE: As with many other drugs, certain advice to patients being treated with enalapril is warranted. This information is intended to aid in the safe and effective use of this medication. It is not a disclosure of all possible adverse or intended effects.

Drug Interactions.

Hypotension. Patients on Diuretic Therapy. Patients on diuretics and especially those in whom diuretic therapy was recently instituted may occasionally experience an excessive reduction of blood pressure after initiation of therapy with enalapril. The possibility of hypotensive effects with enalapril can be minimized by either discontinuing the diuretic or increasing the salt intake prior to initiation of treatment with enalapril. If it is necessary to continue the diuretic, provide close medical supervision after the initial dose for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and DOSAGE AND ADMINISTRATION.)

Agents Causing Renin Release: The antihypertensive effect of VASOTEC is augmented by antihypertensive agents that cause renin release (e.g., diuretics).

Other Cardiovascular Agents. VASOTEC has been used concomitantly with beta-adrenergic-blocking agents, methyldopa, nitrates, calcium-blocking agents, hydralazine, prazosin, and digoxin without evidence of clinically significant adverse interactions.

Agents Increasing Serum Potassium. VASOTEC attenuates potassium loss caused by thiazide-type diuretics. Potassium-sparing diuretics (e.g., spironolactone, triamterene, or amiloride), potassium supplements, or potassium-containing salt substitutes may lead to significant increases in serum potassium. Therefore, if concomitant use of these agents is indicated because of demonstrated hypokalemia, they should be used with caution and with frequent monitoring of serum potassium. Potassium-sparing agents should generally not be used in patients with heart failure receiving VASOTEC.

Lithium: A few cases of lithium toxicity have been reported in patients receiving concomitant VASOTEC and lithium and were reversible upon discontinuation of both drugs. Although a causal relationship has not been established, it is recommended that caution be exercised when lithium is used concomitantly with VASOTEC and serum lithium levels should be monitored frequently.

Pregnancy—Category C. There was no fetotoxicity or teratogenicity in rats treated with up to 200 mg/kg/day of enalapril (333 times the maximum human dose). Fetotoxicity, expressed as a decrease in average fetal weight, occurred in rats given 1200 mg/kg/day of enalapril but did not occur when these animals were supplemented with saline. Enalapril was not teratogenic in rabbits. However, maternal and fetal toxicity occurred in some rabbits at doses of 1 mg/kg/day or more. Saline supplementation prevented the maternal and fetal toxicity seen at doses of 3 and 10 mg/kg/day, but not at 30 mg/kg/day (50 times the maximum human dose).

Radioactivity was found to cross the placenta following administration of labeled enalapril to pregnant hamsters.

There are no adequate and well-controlled studies in pregnant women. VASOTEC® (Enalapril Maleate, MSD) should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers. Milk in lactating rats contains radioactivity following administration of ^{14}C enalapril maleate. It is not known whether this drug is secreted in human milk. Because many drugs are secreted in human milk, caution should be exercised when VASOTEC is given to a nursing mother.

Pediatric Use. Safety and effectiveness in children have not been established.

Adverse Reactions: VASOTEC has been evaluated for safety in more than 10,000 patients, including over 1000 patients treated for one year or more. VASOTEC has been found to be generally well tolerated in controlled clinical trials involving 298 patients.

Hypertension. The most frequent clinical adverse experiences in controlled trials were: headache (5.2%), dizziness (4.3%), and fatigue (3%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in controlled clinical trials were: diarrhea (1.4%), nausea (1.4%), rash (1.4%), cough (1.3%), orthostatic effects (1.2%), and asthenia (1.1%).

Heart Failure: The most frequent clinical adverse experiences in both controlled and uncontrolled trials were: dizziness (7.9%), hypotension (6.7%), orthostatic effects (2.2%), syncope (2.2%), cough (2.2%), chest pain (2.1%), and diarrhea (2.1%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in both controlled and uncontrolled clinical trials were: fatigue (1.8%), headache (1.8%), abdominal pain (1.6%), asthenia (1.6%), orthostatic hypotension (1.6%), vertigo (1.6%), angina pectoris (1.5%), nausea (1.3%), vomiting (1.3%), bronchitis (1.3%), dyspnea (1.3%), urinary tract infection (1.3%), rash (1.3%), and myocardial infarction (1.2%).

Other serious clinical adverse experiences occurring since the drug was marketed or adverse experiences occurring in 0.5% to 1% of patients with hypertension or heart failure in clinical trials in order of decreasing severity within each category:

Cardiovascular. Myocardial infarction or cerebrovascular accident, possibly secondary to excessive hypotension in high-risk patients (see WARNINGS, *Hypotension*); cardiac arrest; pulmonary embolism and infarction; rhythm disturbances, atrial fibrillation, palpitation.

Digestive. Ileus, pancreatitis, hepatitis or cholestatic jaundice, melena, anorexia, dyspepsia, constipation, glossitis.

Nervous/Psychiatric. Depression, confusion, ataxia, somnolence, insomnia, nervousness, paresthesia.

Urogenital. Renal failure, oliguria, renal dysfunction (see PRECAUTIONS and DOSAGE AND ADMINISTRATION), prostate hypertrophy.

Respiratory. Bronchospasm, rhinorrhea, asthma, upper respiratory infection.

Skin. Herpes zoster, pruritus, alopecia, flushing, photosensitivity.

Other. Muscle cramps, hyperhidrosis, impotence, blurred vision, taste alteration, tinnitus.

A symptom complex has been reported which may include fever, myalgia, and arthralgia, an elevated erythrocyte sedimentation rate may be present. Rash or other dermatologic manifestations may occur. These symptoms have disappeared after discontinuation of therapy.

Angioedema. Angioedema has been reported in patients receiving VASOTEC (0.2%). Angioedema associated with laryngeal edema may be fatal. If angioedema of the face, extremities, lips, tongue, glottis, and/or larynx occurs, treatment with VASOTEC should be discontinued and appropriate therapy instituted immediately. (See WARNINGS.)

Hypotension. In the hypertensive patients, hypotension occurred in 0.9% and syncope occurred in 0.5% of patients following the initial dose or during extended therapy. Hypotension or syncope was a cause for discontinuation of therapy in 0.1% of hypertensive patients. In heart failure patients, hypotension occurred in 6.7% and syncope occurred in 2.2% of patients. Hypotension or syncope was a cause for discontinuation of therapy in 1.9% of patients with heart failure. (See WARNINGS.)

Clinical Laboratory Test Findings.

Serum Electrolytes. Hyperkalemia (see PRECAUTIONS), hyponatremia.

Creatinine, Blood Urea Nitrogen. In controlled clinical trials, minor increases in blood urea nitrogen and serum creatinine, reversible upon discontinuation of therapy, were observed in about 0.2% of patients with essential hypertension treated with VASOTEC alone. Increases are more likely to occur in patients receiving concomitant diuretics or in patients with renal artery stenosis. (See PRECAUTIONS.) In patients with heart failure who were also receiving diuretics with or without digitalis, increases in blood urea nitrogen or serum creatinine, usually reversible upon discontinuation of VASOTEC and/or other concomitant diuretic therapy, were observed in about 11% of patients. Increases in blood urea nitrogen or creatinine were a cause for discontinuation in 1.2% of patients.

Hemoglobin and Hematocrit. Small decreases in hemoglobin and hematocrit (mean decreases of approximately 0.3 g % and 1.0 vol %, respectively) occur frequently in either hypertension or heart failure patients treated with VASOTEC but are rarely of clinical importance unless another cause of anemia coexists. In clinical trials, less than 0.1% of patients discontinued therapy due to anemia.

Other (Causal Relationship Unknown). In marketing experience, rare cases of neutropenia, thrombocytopenia, and bone marrow depression have been reported.

Liver Function Tests: Elevations of liver enzymes and/or serum bilirubin have occurred.

Dosage and Administration: *Hypertension.* In patients who are currently being treated with a diuretic, symptomatic hypotension occasionally may occur following the initial dose of VASOTEC. The diuretic should, if possible, be discontinued for two to three days before beginning therapy with VASOTEC to reduce the likelihood of hypotension. (See WARNINGS.) If the patient's blood pressure is not controlled with VASOTEC alone, diuretic therapy may be resumed.

If the diuretic cannot be discontinued, an initial dose of 2.5 mg should be used under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions.*)

The recommended initial dose in patients not on diuretics is 5 mg once a day. Dosage should be adjusted according to blood pressure response. The usual dosage range is 10 to 40 mg per day administered in a single dose or in two divided doses. In some patients treated once daily, the antihypertensive effect may diminish toward the end of the dosing interval. In such patients, an increase in dosage or twice-daily administration should be considered. If blood pressure is not controlled with VASOTEC alone, a diuretic may be added.

Concomitant administration of VASOTEC with potassium supplements, potassium salt substitutes, or potassium-sparing diuretics may lead to increases of serum potassium (see PRECAUTIONS).

Dosage Adjustment in Hypertensive Patients with Renal Impairment. The usual dose of enalapril is recommended for patients with a creatinine clearance >30 mL/min (serum creatinine of up to approximately 3 mg/dL). For patients with creatinine clearance ≤30 mL/min (serum creatinine ≥3 mg/dL), the first dose is 2.5 mg once daily. The dosage may be titrated upward until blood pressure is controlled or to a maximum of 40 mg daily.

Heart Failure. VASOTEC is indicated as adjunctive therapy with diuretics and digitalis. The recommended starting dose is 2.5 mg once or twice daily. After the initial dose of VASOTEC, the patient should be observed under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions.*) If possible, the dose of the diuretic should be reduced, which may diminish the likelihood of hypotension. The appearance of hypotension after the initial dose of VASOTEC does not preclude subsequent careful dose titration with the drug, following effective management of the hypotension. The usual therapeutic dosing range for the treatment of heart failure is 5 to 20 mg daily given in two divided doses. The maximum daily dose is 40 mg. Once-daily dosing has been effective in a controlled study, but nearly all patients in this study were given 40 mg, the maximum recommended daily dose, and there has been much more experience with twice-daily dosing. In addition, in a placebo-controlled study which demonstrated reduced mortality in patients with severe heart failure (NYHA Class IV), patients were treated with 2.5 to 40 mg per day of VASOTEC, almost always administered in two divided doses. (See CLINICAL PHARMACOLOGY, *Pharmacodynamics and Clinical Effects.*) Dosage may be adjusted depending upon clinical or hemodynamic response. (See WARNINGS.)

Dosage Adjustment in Heart Failure Patients with Renal Impairment or Hyponatremia. In heart failure patients with hyponatremia (serum sodium <130 mEq/L) or with serum creatinine >1.6 mg/dL, therapy should be initiated at 2.5 mg daily under close medical supervision. (See DOSAGE AND ADMINISTRATION, *Heart Failure*, WARNINGS, and PRECAUTIONS, *Drug Interactions.*) The dose may be increased to 2.5 mg b.i.d., then 5 mg b.i.d. and higher as needed, usually at intervals of four days or more, if at the time of dosage adjustment there is not excessive hypotension or significant deterioration of renal function. The maximum daily dose is 40 mg.

For more detailed information, consult your MSD representative or see Prescribing Information. Merck Sharp & Dohme, Division of Merck & Co., Inc., West Point, PA 19486 J6VS18R(815)

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We Object!

We object strenuously to two erosions of our civil liberties as professionals and as citizens. Both are the nefarious machinations of the feds.

The first is a long-standing regulation of the HCFA — the Health Care Financing Administration. This, we emphasize, is NOT a law — it is a bureaucratic regulation devised without the people's consent.

Amazingly, most recently, we were reminded of it by none other than our own Neal Winn, whose signature is appended to a reminder/directive from KMCWC; Neal is one of our stalwarts in supporting organized medicine and in trying to prevent the very erosion that we are addressing. We quote:

> The Health Care Financing Administration (HCFA) of the federal government requests all physicians who admit Medicare or Champus patients to hospitals to sign an annual acknowledgment that they have received notice of the penalty of misrepresenting or falsifying diagnoses or procedures performed on patients.

The statement that physicians are asked to sign goes, in part, as follows:

> ". . . Anyone who misrepresents, falsifies or conceals essential information required for payment of Federal funds, may be subject to fine, imprisonment or civil penalty under applicable federal laws."

s/_____ M.D.
(Legal signature, no initials please)

As another staunch defender of the faith in the profession, Fred Gilbert, added, when he signed it: "I have read the above notice and disagree strongly with both the implications and the necessity of signing this document. However, on second thought, I guess that people like (RR, GB & ON) believe that *all* people are as honest as they, and the Administration, are; hence their reasoning in requiring such an acknowledgment (as the above)."

It reminds us of the old, McCarthy era, Congressional Subversive Activities Commission days, local mandate for all Hawaii Government Physicians serving rural areas to certify that they were not, and never had been, members of the Communist Party. *That* one was determined to be unenforceable and illegal — yet it was a "law"!

Fred suggests all physicians refuse to sign the HCFA statement; and then see what happens!

The second is the very recent instance of HMA member Gary Blaich, psychiatrist on Kauai, refusing to accede to an order of a federal grand jury in San Francisco for the confidential doctor/patient medical records in a case before it.

The American Psychiatric Association (APA) is supporting Gary; it and Gary are being represented by the ACLU of Hawaii in defense of the principle.

We have long contended that the release of medical records should be wholly on the authority of the patient and with the consent of the physician. Without the release by *both,* no governmental or judiciary agency should be able to subpoena these confidential notes *made by a physician for the purpose of providing personalized care to his or her patient.*

Although psychiatrists' notes are evidence of deep penetration into the patient's inner being and most secret confessions — something all physicians can, must and actually do; although the confidences revealed to psychiatrists may be closer to the bull's eye in this particular instance, the principle applies equally to all physician/patient relationships.

Governing bodies claim that medical records are public property; they are NOT! Those records are an extension of us — our private thoughts!

Our ultimate defense may actually have to be: NO WRITTEN RECORDS! "Dear doctor, please keep this all in your head; and, if you happen to forget what I, the patient, told you, so be it." Now, wouldn't that be a fine way to practice medicine? Would that serve the best interests of the patient?

The other alternative is being exemplified by Gary Blaich's strong stand. We ourselves have often thought of throwing out of the office any minion of the law who comes in demanding *OUR* confidential medical records.

There are other ways to do it; such as to hide, or destroy, or, to follow a high and official example, to put it to the shredder.

How much more similar to the pre-Perestroika Russia must we emulate before our "government of the people, by the people and for the people" is itself destroyed?

We wish Fred Gilbert and Gary Blaich both: "Keep the faith, lads!"

J.I. Frederick Reppun MD
Editor



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More on the seriously disabled mentally ill in Hawaii

In answer to a previous issue of the JOURNAL devoted to the care of persons with mental illness (SDMI) in Hawaii, Wallace K.C. Chun, MD, consultant to the State Department of Human Services, has submitted the article "Medicaid Recipients and Psychiatric Treatment" for the current issue. It is in a format of a gentle rebuttal.

Those readers who have perused the articles in the SDMI issue — articles that addressed Hawaii's opprobrious position at the bottom of the list of 50 states of the Union in terms of quality of care for the SDMI, might gather some solace from learning from Wally Chun that the Hawaii DHS has done a great deal for its SDMI "clients."

We regret that his article was not included in the special issue on mental health; however, we appreciate the fact that the special issue elicited this response.

J.I. Frederick Reppun, MD
Editor

The doctor can't be bothered; but his staff is!

In a previous issue of the JOURNAL, Frank Abou-Sayf, while statistician with HMSA, utilized its vast data base to analyze hospital usage. Here now comes his analysis of the faults and virtues of the doctor's anathema — the hated DRGs, the Diagnosis Related Groups.

Frank compares the current system utilized by Medicare, Medicaid and HMSA with alternative methodologies that interest the non-physician managers of our practice of medicine. The latter are forever searching for ways to satisfy the patient/public's need for good, quality medical care (and we don't mean "healthcare"!), albeit making it difficult to do so by trying to reduce costs.

Our main dispute with the DRG system is that it does not take into account the vagaries of each separate and different affliction affecting each separate and different patient. Abou-Sayf speaks to that problem.

Even though our reader/physicians dislike the subject, Frank's treatise makes for interesting reading.

J.I. Frederick Reppun, MD
Editor

Council Capers

March 3, 1989

It was dark and the wind rustled my windbreaker as I boarded my Aloha flight. Shortly after takeoff, the captain's voice filled the cabin: "Due to an unexpected circumstance, we will be returning to the airport." You could feel the airplane turning and descending. With all the recent incidents, I looked out both windows and saw that both wings were still intact. There was no smoke or wind in the cabin as the plane gradually landed. But lo and behold, there were four fire engines, all lit up and following the plane as it landed. We were then transferred to another plane and sent on our way. To this day, I still do not know what happened to the first plane.

Our Council meeting happily began after a modest buffet dinner, after which our president, Allan Kunimoto, called the meeting to order.

No Ka Oi . . . Out of the five different counties, Maui was the only county to show an *increase* in the HMA membership from February of last year, while every other county showed a decrease. Way to go!

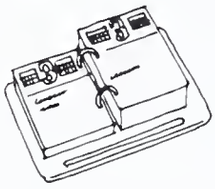
Top Gun . . . Allan gave an informative review of the Health Quality Improvement Act of October 1986. The Hawaii Medical Association was also recognized for the increase of AMA membership for the eighth consecutive year. He also announced the interest expressed in the Young Physician's Group of the HMA. (Now with both a "Young" and a "Senior Physicians" group, are we to be considered "Old" physicians?)

Working 4 U . . . With the Legislative Session near the midway point, and with over 600 health-related bills on the calendar, your HMA staff has attended and testified in 104 hearings thus far. It is truly gratifying to know we are being represented in force.

Poison . . . Steve Moser strongly recommends a follow-up of sugarcane burning and its effect on occupational lung disorders. His committee further recommends testing blood lead levels in children. Increased blood lead (P6) levels can be devastating to the developing child.

Tip of the Month . . . Last month I recommended the Fujiya Restaurant on Market Street; it has a great sushi bar. One of my favorites there is Tobiko sushi. It is made with flying-fish eggs and is very tasty — better than Beluga caviar.

Denis J. Fu, MD
Councillor from Maui



Continuing Medical Education

CALENDAR OF ACCREDITED EVENTS—CATEGORY 1

Accredited Programs of CME allow one unit of AMA credit for each hour of instruction excluding all "breaks." Some programs also are accredited for AAFP-prescribed credit.

LOCAL ACCREDITED PROGRAMS

ONGOING

For a complete list of ongoing programs, please refer to the April 1989 edition of the HAWAII MEDICAL JOURNAL. Further information is available through the individual institutions or through the HMA's CME Department.

SPECIAL EVENTS

All special events should be confirmed with the CME program sponsors, as cancellations are not necessarily reported to the HAWAII MEDICAL JOURNAL.

June 15, 1989	Strategies of Type I and Type II Diabetes, American Diabetes Association—Hawaii Affiliate, State Department of Health. Contact: ADA Hawaii Affiliate, 510 S. Beretania St., Honolulu, HI 96813. Location: Pagoda Hotel, Honolulu.
June 29-July 7, 1989	The Seventh Annual Controversies in Obstetrics & Gynecology. Contact: Memorial Medical Center-University of California Irvine (MMC-UCI) Center for Health Education, 2801 Atlantic Ave. (P.O. Box 1428), Long Beach, CA 90801-1428, 213-595-3811. Location: Mauna Kea Beach Hotel, Big Island.
July 29-August 5, 1989	Update in Urogynecology. Contact: Director MMC-UCI Center for Health Education, 2801 Atlantic Ave. (P.O. Box 1428), Long Beach, CA 90801-1428. Location: Seven-day cruise of the Hawaiian Islands.
July 31-Aug. 3, 1989	Practical Orthopaedic Sports Medicine. Contact: Stuart Zeman, MD, Course Chairman, 2999 Regent St., #203, Berkeley, CA 94705, 415-540-8686. Location: Hyatt Regency Waikoloa, Big Island.
Aug. 13-23, 1989	USC 32nd Annual Postgraduate Refresher Course. Contact: USC, School of Medicine, Postgraduate Division, 1975 Zonal Ave., Los Angeles, CA 90033, 800-421-6729. Location: Westin, Maui, and Hyatt Waikoloa, Big Island of Hawaii.
Aug. 20-23, 1989	Third International Symposium on Lipofuscin and Ceroid Pigments - 1989: State of the Art. Contact: E.A. Porta, MD, Department of Pathology, School of Medicine, University of Hawaii, 1960 East-West Rd., Honolulu, HI 96822. Location: Stouffer Wailea Beach Resort, Maui.
Sept. 30-Oct. 4, 1989	International Conference on Bioenergetic Medicine - Past, Present and Future. Contact: Continuing Medical Education, John A. Burns School of Medicine, University of Hawaii, 1960 East-West Rd., Honolulu, HI 96822, 808-948-6949. Location: East-West Center, Honolulu.
Oct. 14-21, 1989	New Approaches to the Evaluation of Neoplastic Lymphoproliferative Disorders, USC School of Medicine University Pathology Associates. Contact: University Pathology Associates Inc., Department of Pathology, USC School of Medicine, 2025 Zonal Ave., Los Angeles, CA 90033. Location: Wailea Beach Resort, Maui.
Nov. 2-7, 1989	THE ACP-UH MKSAP VIII Review Course. Contact: Irwin J. Schatz, M.D., professor and chairman, Department of Medicine, John A. Burns School of Medicine, 1960 East-West Rd., Honolulu, HI 96822, 808 548-2810. Location: Stouffer's Wailea Beach Resort, Maui.

The Hawaii Medical Association does not review or evaluate the programs listed in the Hawaii Medical Journal Continuing Medical Education column and assumes no responsibility for educational value, scientific content, changes in agenda or cancellations.

(Continued on page 242)

Medicaid recipients and psychiatric treatment

Wallace K.C. Chun, MD*

This is a report of an analysis of data collected on 7,000 Medicaid outpatients in psychotherapy and 2,500 psychiatric inpatients. The data were collected over an 18-month period, from December 1986 to May 1988, from patients on Oahu, Hawaii, Maui and Kauai.

Patients and methods

Patients

All of the outpatients were Medicaid recipients. The inpatients were admitted to the psychiatric units of The Queen's Medical Center (QMC), Castle Medical Center (CMC) and Saint Francis Medical Center (SFMC) on Oahu, and to Hilo Hospital, Maui Memorial Hospital and Kauai's Mahelona Hospital. Of the 2,500 inpatients, 376, or 15%, were known to be Medicaid recipients in the General Assistance (G) or Medical Only (M) categories, as they had their Medicaid Identification Cards with them at the time of admission. An unknown number of the remainder of the patients who were admitted, were Medicaid recipients who did not have their Medicaid IDs with them at the time of admission.

Method

The Department of Human Services (DHS) regulations require the submission of Medicaid Form 1018, Request for Extension of Outpatient Visits, for all Medicaid recipients in outpatient psychotherapy. Medicaid Form 1144, Request for Medical Authorization, is required for all Medicaid psychiatric admissions to inpatient care. Both forms must be received at DHS within five working days of the therapy or the admission. To ensure that Medicaid will pay for the hospitalizations of those who do not have the means to pay, 1144s have been routinely submitted for all psychiatric admissions. The Health Care Authorization Branch of the Health Care Administration Division of DHS has the responsibility to review and authorize requests for both outpatient psychotherapy and psychiatric admissions for Medicaid recipients. Thus, the requests make up the pool of data that was analyzed in this report.

* Psychiatric Consultant
Health Care Administration Division
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State of Hawaii

Results

Outpatients

The distribution of the patients by the island from which requests for approval for outpatient therapy originated is presented in Figure 1.

The distribution of patients by island and sex is graphically presented in Figure 2. Statewide totals show that females very slightly outnumbered the males 3,515 to 3,485. The distribution of patients by age groups is also graphically presented in Figure 3. Those 45 years old or younger made up 85% of all the outpatients in psychotherapy.

The distribution of patients by categories is presented in Figure 4. G represents the General Assistance category; C, those in the Aid to Families with Dependent Children category; M, the Medical Only category, and E, the Supplemental Security Income/Foster Care category.

Table 1 shows the distribution of patients by island, sex and categories. Males made up nearly two-thirds of those in the G category, while females made up more than two-thirds of those in the C category. The G and C categories combined made up 70% of those in outpatient therapy.

Table 2 shows the distribution of patients by age, category, island and sex. This table presents more detailed information than what is shown in Figures 1 through 4, and in Table 1.

Table 3 shows the distribution of patients by diagnosis, island and sex. When those with the diagnoses of Alcohol and Substance Abuse are combined, the new group total of 1,332 represents 19% of the outpatients, the largest group in outpatient psychotherapy.

The distribution of patients by providers is presented in Figure 5. MD represents psychiatrists, PhD represents psychologists and Clinics represent the Queen's Medical Health Clinic, Kapiolani Counseling Center and the State Mental Health Clinics.

Table 4 shows the distribution of patients by providers, island and sex. Psychiatrists treated more males than females, while the reverse is true for psychologists.

The distribution of patients by island, providers and sex is graphically presented in Figures 5A through 5D.

Table 5 shows the distribution of patients by diagnosis, providers and new patients. Psychiatrists treated most of the Bipolars, Major Depressives and Schizophrenics, ►

whereas psychologists treated most of the Adjustment Disorders. The diagnostic group with the largest number of new patients (those with no previous history of being in treatment as Medicaid recipients) was Adjustment Disorder.

Table 6 shows the distribution by age and diagnosis. As noted previously, the majority of the patients was in the 18-45 age range. Another interesting finding was the very large number of patients (550) less than 18 years old with the diagnosis of Adjustment Disorder. Child Protective Services (CPS) referred 111, or 20%, of that group for treatment, which is one-third of the 333 patients that CPS referred for treatment.

Table 7 shows some specifics about patients with the diagnosis of Schizophrenia: When they were first seen, and, for those who were first seen before 1983, the age and category distribution. A significant finding is the large group of patients (530) that was seen before 1983; 328, or 60%, of them were between the ages of 26 and 45.

Inpatients

The distribution of patients by island is presented in Figure 6. The distribution of patients on Oahu by hospital is shown in Figure 7, and by hospital and sex in Figure 7A.

A comparison of the percentage of outpatients versus inpatients for each island is graphically shown in Figure 8. There is almost no difference between the two on the island of Oahu, but there is a significant difference on all the other islands. Figure 8A shows the following: (1) The percentages on each island of (a) the State's population, (b) its Medicaid recipients, (c) those in outpatient psychotherapy and (d) its psychiatric admissions; (2) there is very little difference in the percentages of the 4 groups on Oahu; (3) on Hawaii, the percentage of Medicaid recipients and outpatients is larger than its percentage of the State's population, and the percentage of inpatients is less than one-half that of the outpatients; (4) on Maui, the percentage of the Medicaid recipients is almost equal to their percentage of the State's population, and the percentage of inpatients is 6 times that of the outpatients; (5) on Kauai, the percentage of the Medicaid recipients and the State's population is the same, and the percentage of inpatients is more than three times that of the outpatients.

The distribution of inpatients by island and sex is graphically shown in Figure 9. The distribution by diagnoses is shown in Figure 10.

Tables 8 and 9 shows the distribution by age, diagnoses, island and sex in much greater detail than is shown in previous figures. Those between the ages of 18 and 45 made up three-fourths of the admissions. Those under 18 and 65 made up one-tenth of the admissions. Those attempting suicide made up 4% of the admissions, with females outnumbering males by a ratio of 3-to-2.

Figure 11 shows that the large majority of patients, nearly four-fifths of them, were admitted only once during the 18-month period. Figure 12 shows the relatively even distribution of admissions by months, with the exception of March 1988. The low number of admissions in December 1986 and in April 1988 are probably artifacts because they represent the beginning and the end of the period in which the data was collected.

Discussion

The data collected on outpatients accurately reflect Medicaid recipients in outpatient psychotherapy.

The data collected on psychiatric admissions are a relatively accurate reflection of the admissions during a specific period.

The analysis of the data provides DHS with information that was not known previously and can be considered baseline. This information can be used in current as well as in future planning and studies.

Of special interest are the data on schizophrenics, who may be considered "Seriously Disabled Mentally Ill" (SDMI), depending on what criteria are used to define the term. Since the State is deeply interested and involved in the treatment of the SDMI, with the Robert Wood Johnson Foundation Grant as a focal point, this report may provide information that can be used in current and future studies. ■

TABLE I

Distribution by Island, Sex and Categories
Outpatients

	Oahu			Hawaii			Maui			Kauai			Totals		
Cat	Male	Female	Stot	Male	Female	Stot	Male	Female	Stot	Male	Female	Stot	Totm	Totf	Gtot
G	1549	756	2305	368	216	584	19	24	43	35	29	64	1971	1025	2996
C	334	895	1229	166	367	533	11	52	63	11	34	45	522	1348	1870
M	194	196	390	42	58	100	5	6	11	5	7	12	246	267	513
E	385	490	875	71	105	176	11	15	26	4	10	14	471	620	1091
Other	244	206	450	22	37	59	3	9	12	6	3	9	275	255	530
	2706	2543	5249	669	783	1452	49	106	155	61	83	144	3485	3515	7000

G= Generol Assistonce; C= Aid to fomilies with dependent children; E= Supplementol security income/foster core; M= Medicol only.
CAT= Cotegories; STOT= Subtotal; TOTM= Total Mole; TOTF= Totol female; GTOT= Grond totol.

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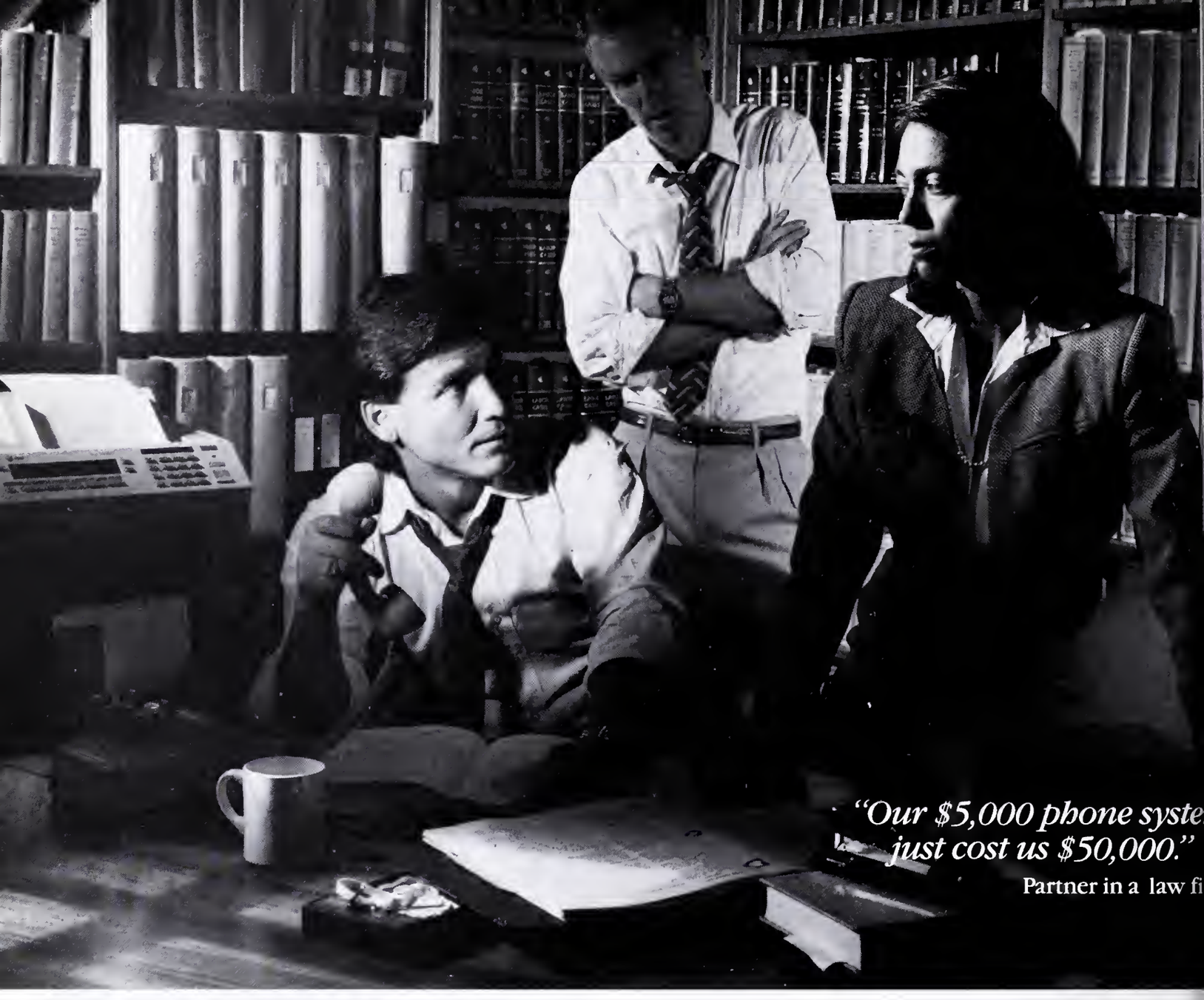
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TABLE II

Distribution by Age, Category Island and Sex
Outpatients

		Oahu			Hawaii			Maui			Kauai			Totals		
Age	Cat	Male	Female	Stot	Male	Female	Stot	Male	Female	Stot	Male	Female	Stot	Totm	Totf	Gtot
	G	7	9	16	4	3	7	0	0	0	0	0	0	11	12	23
<18	C	220	186	406	112	93	205	8	9	17	5	5	10	345	293	638
	E	74	99	173	18	35	53	1	3	4	1	1	2	94	138	232
	G	268	103	371	55	38	93	4	4	8	4	3	7	331	148	479
18-25	C	14	107	121	5	48	53	0	3	3	1	4	5	20	162	182
	E	48	47	95	8	10	18	1	1	2	1	1	2	58	59	117
	G	649	258	907	167	65	232	5	10	15	14	13	27	835	346	1181
26-35	C	41	337	378	19	134	153	1	26	27	1	12	13	62	509	571
	E	113	84	197	22	13	35	5	4	9	0	1	1	140	102	242
	G	422	213	635	116	69	185	7	9	16	12	10	22	557	301	858
36-45	C	39	224	263	24	79	103	2	11	13	1	9	10	66	323	389
	E	65	84	149	15	27	42	2	2	4	1	2	3	83	115	198
	G	142	109	251	21	34	55	2	0	2	4	2	6	169	145	314
46-55	C	16	37	53	5	12	17	0	3	3	2	4	6	23	56	79
	E	46	64	110	1	8	9	1	3	4	1	3	4	49	78	127
	G	61	63	124	5	7	12	1	1	2	1	1	2	68	72	140
56-65	C	4	4	8	1	1	2	0	0	0	1	0	1	6	5	11
	E	25	78	103	5	5	10	1	2	3	0	2	2	31	87	118
	G	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1
>65	C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	14	34	48	2	7	9	0	0	0	0	0	0	16	41	57
	G	1549	756	2305	368	216	584	19	24	43	35	29	64	1971	1025	2996
TOTALS	C	334	895	1229	166	367	533	11	52	63	11	34	45	522	1348	1870
	E	385	490	875	71	105	167	11	15	26	4	10	14	471	620	1091

G= General Assistance; C= Aid ta families with dependent children; E= Supplemental security income/faster care.
CAT= Categaries; STOT= Subtatal; TOTM= Tatal Male; TOTF= Tatal female; GTOT= Grand total.

TABLE III

Distribution by Diagnosis, Island and Sex
Outpatients

	Oahu			Hawaii			Maui			Kauai					
DX	Male	Female	Stot	Male	Female	Stot	Male	Female	Stot	Male	Female	Stot	Totm	Totf	Gtot
ALC	726	105	831	46	12	58	1	1	2	18	8	26	791	126	917
DYS	283	505	788	90	199	289	2	19	21	11	15	26	386	738	1124
SCH	436	387	823	90	69	159	10	12	22	6	16	22	542	484	1026
ADJ	271	515	786	89	201	290	6	29	35	9	22	31	375	767	1142
PER	160	183	343	95	41	136	5	6	11	2	4	6	262	234	496
DEP	79	206	285	40	70	110	3	2	5	2	9	11	124	287	411
SUB	279	103	382	17	8	25	5	1	6	1	1	2	302	113	415
BIP	84	107	191	13	14	27	1	1	2	3	4	7	101	126	227
ANX	49	121	170	32	46	78	3	14	17	0	2	2	84	183	267
OTHER	339	311	650	157	123	280	13	21	34	9	2	11	518	457	975
	2706	2543	5249	669	783	1452	49	106	155	61	83	144	3485	3515	7000

DX= Diagnasis; ALC= Alcahal; DYS= Dysthymia; SCH= Schizaphrenia; ADJ= Adjustment Disarder; PER= Personality Disorder; DEP= Depressian; SUB= Substance Abuse; BIP= Bipalar; ANX= Anxiety.
STOT= Subtatal; TOTM= Tatal Male; TOTF= Tatal female; GTOT= Grand tatal.

TABLE IV

Distribution by Providers, Island and Sex

	Oahu			Hawaii			Maui			Kauai					
	Male	Female	Stot	Male	Female	Stot	Male	Female	Stot	Male	Female	Stot	Totm	Totf	Gtot
M.D.	1821	1411	3232	494	371	865	10	22	32	48	64	112	2373	1868	4241
Ph.D	733	923	1656	175	412	587	26	70	96	13	19	32	947	1424	2371
CLIN	152	209	361	—	—	—	13	14	27	—	—	—	165	223	388
	2706	2543	5249	669	783	1452	49	106	155	61	83	144	3485	3515	7000

M.D.= Psychiatrists; PhD= Psychologists; CLIN= Clinics
STOT= Subtotal; TOTM= Total Male; TOTF= Total female; GTOT= Grand total.

TABLE V

Distribution by Diagnosis, Providers, New Patients

	M.D.		Ph.D		CLINICS		NEW PTS	
DX	#	%	#	%	#	%	#	%
BIP	189	83	23	10	15	7	43	19
DEP	336	82	62	15	13	3	178	43
SCH	828	81	83	8	115	11	177	17
ALC	720	79	182	20	15	1	443	48
SUB	312	75	86	21	17	4	258	62
DYS	692	61	404	36	28	3	398	35
PER	266	53	207	42	23	5	156	31
ANX	138	52	108	40	21	8	101	38
ADJ	337	30	739	64	66	6	731	64
OTHER	423	43	477	49	75	8	443	45
TOTAL	4241		2371		388		2928	

DX= Diagnosis; BIP= Bipolar; DEP= Depression; SCH= Schizophrenia; ALC= Alcohol; SUB= Substance Abuse; DYS= Dysthymia; PER= Personality Disorder; ANX= Anxiety; ADJ= Adjustment Disorder.

TABLE VI

Distribution By Age and Diagnosis

AGE	ADJ	DYS	SCH	ALC	PER	SUB	DEP
>18	550	36	7	2	9	2	10
18-25	117	156	130	130	77	97	44
26-35	255	396	355	397	219	205	131
36-45	144	336	265	256	142	98	108
46-55	46	120	134	98	32	12	67
56-65	26	64	84	34	15	1	42
>65	4	16	51	0	2	0	9
TOTALS	1142	1124	1026	917	496	415	411

DX= Diagnosis; BIP= Bipolar; DEP= Depression; SCH= Schizophrenia; ALC= Alcohol; SUB= Substance Abuse; DYS= Dysthymia; PER= Personality Disorder; ANX= Anxiety; ADJ= Adjustment Disorder.

TABLE VII

Schizophrenia

				YF<83	
YF	#	AGE	#	CAT	#
88	27	<18	1	E	258
87	149	18-25	25	G	111
86	86	26-35	181	D	65
85	84	36-45	147	M	47
84	69	46-55	92	C	32
83	81	56-65	53	N	8
<83	530	>65	31	A	6
	1026		530	OTHER	3
					530

YF= Year first seen; CAT= Category; E=Supplemental security income/foster care; G= General assistance; D= Disabled; M= Medical only; C= Aid to families with dependent children; N= Categorically needy; A= Aged.

(Continued on page 229)

ARMY RESERVE MEDICAL PROFILE NO.9



Dr. Holwick outside of hospital where she practices as a civilian traumatologist.



Dr. Holwick in operating room at Letterman Army Medical Center.

JANN L. HOLWICK, M.D.

General and Trauma Surgeon.
Captain, U.S. Army Reserve.

EDUCATION University of Southern California, B.S.; University of California School of Medicine.

RESIDENCY Harbor General Hospital—UCLA Medical Center.

HOSPITAL AFFILIATIONS St. Luke Hospital; Huntington Memorial Hospital, Pasadena, California; Traumatologist, Arcadia Methodist Hospital, Arcadia, California.

OUTSTANDING ACHIEVEMENTS Borden Freshman Prize; Alpha Lambda Delta; Phi Beta Kappa; Phi Kappa Phi; Bovard Award; ALD Award; American Institute of Chemists Medal Award; Summa Cum Laude, University of California; Alpha Omega Alpha.

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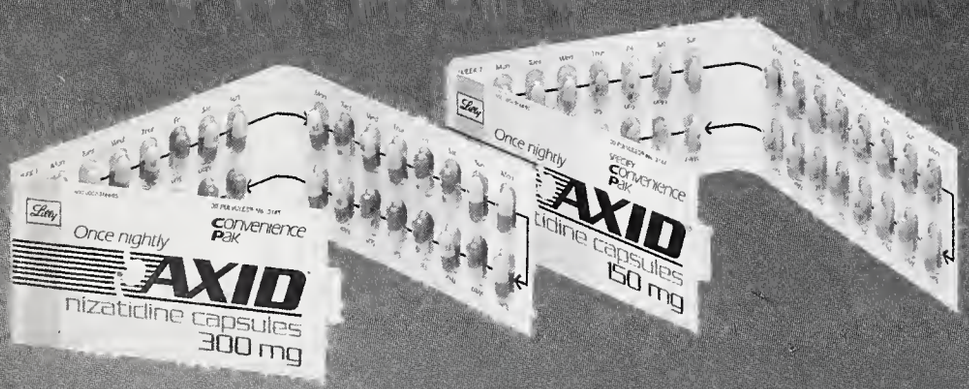
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Brief Summary

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Indications and Usage: Axid is indicated for up to eight weeks for the treatment of active duodenal ulcer. In most patients, the ulcer will heal within four weeks.

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Contraindication: Axid is contraindicated in patients with known hypersensitivity to the drug and should be used with caution in patients with hypersensitivity to other H_2-receptor antagonists.

Precautions: *General* – 1. Symptomatic response to nizatidine therapy does not preclude the presence of gastric malignancy.

2. Because nizatidine is excreted primarily by the kidney, dosage should be reduced in patients with moderate to severe renal insufficiency.

3. Pharmacokinetic studies in patients with hepatorenal syndrome have not been done. Part of the dose of nizatidine is metabolized in the liver. In patients with normal renal function and uncomplicated hepatic dysfunction, the disposition of nizatidine is similar to that in normal subjects.

Laboratory Tests – False-positive tests for urobilinogen with Multistix® may occur during therapy with nizatidine.

Drug Interactions – No interactions have been observed between Axid and theophylline, chlordiazepoxide, lorazepam, lidocaine, phenytoin, and warfarin. Axid does not inhibit the cytochrome P-450-linked drug-metabolizing enzyme system; therefore, drug interactions mediated by inhibition of hepatic metabolism are not expected to occur. In patients given very high doses (3,900 mg) of aspirin daily, increases in serum salicylate levels were seen when nizatidine, 150 mg b.i.d., was administered concurrently.

Carcinogenesis, Mutagenesis, Impairment of Fertility – A two-year oral carcinogenicity study in rats with doses as high as 500 mg/kg/day (about 80 times the recommended daily therapeutic dose) showed no evidence of a carcinogenic effect. There was a dose-related increase in the density of enterochromaffin-like (ECL) cells in the gastric oxyntic mucosa. In a two-year study in mice, there was no evidence of a carcinogenic effect in male mice; although hyperplastic nodules of the liver were increased in the high-dose males as compared with placebo. Female mice given the high dose of Axid (2,000 mg/kg/day, about 330 times the human dose) showed marginally statistically significant increases in hepatic carcinoma and hepatic nodular hyperplasia with no numerical increase seen in any of the other dose groups. The rate of hepatic carcinoma in the high-dose animals was within the historical control limits seen for the strain of mice used. The female mice were given a dose larger than the maximum tolerated dose, as indicated by excessive (30%) weight decrement as compared with concurrent controls and evidence of mild liver injury (transaminase elevations). The occurrence of a marginal finding at high dose only in animals given an excessive and somewhat hepatotoxic dose, with no evidence of a carcinogenic effect in rats, male mice, and female mice (given up to 360 mg/kg/day, about 60 times the human dose), and a negative mutagenicity battery are not considered evidence of a carcinogenic potential for Axid.

Axid was not mutagenic in a battery of tests performed to evaluate its potential genetic toxicity, including bacterial mutation tests, unscheduled DNA synthesis, sister chromatid exchange, mouse lymphoma assay, chromosome aberration tests, and a micronucleus test.

In a two-generation, perinatal and postnatal fertility study in rats, doses of nizatidine up to 650 mg/kg/day produced no adverse effects on the reproductive performance of parental animals or their progeny.

Pregnancy – Teratogenic Effects – Pregnancy Category C – Oral reproduction studies in rats at doses up to 300 times the human dose and in Dutch Belted rabbits at doses up to 55 times the human dose revealed no evidence of impaired fertility or teratogenic effect; but, at a dose equivalent to 300 times the human dose, treated rabbits had abortions, decreased number of live fetuses, and depressed fetal weights. On intravenous administration to pregnant New Zealand White rabbits, nizatidine at 20 mg/kg produced cardiac enlargement, coarctation of the aortic arch, and cutaneous edema in one fetus and at 50 mg/kg it produced ventricular anomaly, distended abdomen, spina bifida, hydrocephaly, and enlarged heart in one fetus. There are, however, no adequate and well-controlled studies in pregnant women. It is also not known whether nizatidine can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Nizatidine should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers – Studies conducted in lactating women have shown that < 0.1% of the administered oral dose of nizatidine is secreted in human milk in proportion to plasma concentrations. Caution should be exercised when administering nizatidine to a nursing mother.

Pediatric Use – Safety and effectiveness in children have not been established.

Use in Elderly Patients – Ulcer healing rates in elderly patients are similar to those in younger age groups. The incidence rates of adverse events and laboratory test abnormalities are also similar to those seen in other age groups. Age alone may not be an important factor in the disposition of nizatidine. Elderly patients may have reduced renal function.

Adverse Reactions: Clinical trials of nizatidine included almost 5,000 patients given nizatidine in studies of varying durations. Domestic placebo-controlled trials included over 1,900 patients given nizatidine and over 1,300 given placebo. Among reported adverse events in the domestic placebo-controlled trials, sweating (1% vs 0.2%), urticaria (0.5% vs < 0.01%), and somnolence (2.4% vs 1.3%) were significantly more common in the nizatidine group. A variety of less common events was also reported, it was not possible to determine whether these were caused by nizatidine.

Hepatic – Hepatocellular injury, evidenced by elevated liver enzyme tests (SGOT [AST], SGPT [ALT], or alkaline phosphatase), occurred in some patients and was possibly or probably related to nizatidine. In some cases, there was marked elevation of SGOT, SGPT enzymes (greater than 500 IU/L) and, in a single instance, SGPT was greater than 2,000 IU/L. The overall rate of occurrences of elevated liver enzymes and elevations to three times the upper limit of normal, however, did not significantly differ from the rate of liver enzyme abnormalities in placebo-treated patients. All abnormalities were reversible after discontinuation of Axid.

Cardiovascular – In clinical pharmacology studies, short episodes of asymptomatic ventricular tachycardia occurred in two individuals administered Axid and in three untreated subjects.

CNS – Rare cases of reversible mental confusion have been reported.

Endocrine – Clinical pharmacology studies and controlled clinical trials showed no evidence of antiandrogenic activity due to Axid. Impotence and decreased libido were reported with equal frequency by patients who received Axid and by those given placebo. Rare reports of gynecomastia occurred.

Hematologic – Fatal thrombocytopenia was reported in a patient who was treated with Axid and another H_2-receptor antagonist. On previous occasions, this patient had experienced thrombocytopenia while taking other drugs. Rare cases of thrombocytopenic purpura have been reported.

Integumental – Sweating and urticaria were reported significantly more frequently in nizatidine- than in placebo-treated patients. Rash and exfoliative dermatitis were also reported.

Hypersensitivity – As with other H_2-receptor antagonists, rare cases of anaphylaxis following administration of nizatidine have been reported. Because cross-sensitivity in this class of compounds has been observed, H_2-receptor antagonists should not be administered to individuals with a history of previous hypersensitivity to these agents. Rare episodes of hypersensitivity reactions (eg, bronchospasm, laryngeal edema, rash, and eosinophilia) have been reported.

Other – Hyperuricemia unassociated with gout or nephrolithiasis was reported. Eosinophilia, fever, and nausea related to nizatidine administration have been reported.

Overdosage: Overdoses of Axid have been reported rarely. The following is provided to serve as a guide should such an overdose be encountered.

Signs and Symptoms – There is little clinical experience with overdosage of Axid in humans. Test animals that received large doses of nizatidine have exhibited cholinergic-type effects, including lacrimation, salivation, emesis, miosis, and diarrhea. Single oral doses of 800 mg/kg in dogs and of 1,200 mg/kg in monkeys were not lethal. Intravenous median lethal doses in the rat and mouse were 301 mg/kg and 232 mg/kg respectively.

Treatment – To obtain up-to-date information about the treatment of overdose, a good resource is your certified regional Poison Control Center. Telephone numbers of certified poison control centers are listed in the *Physicians' Desk Reference (PDR)*. In managing overdosage, consider the possibility of multiple drug overdoses, interaction among drugs, and unusual drug kinetics in your patient.

If overdosage occurs, use ot activated charcoal, emesis, or lavage should be considered along with clinical monitoring and supportive therapy. Renal dialysis for four to six hours increased plasma clearance.

PV 2096 AMP [013089]

Additional information available to the profession on request.

TABLE VIII

Distribution by Age, Island and Sex
Inpatients

	Oahu			Hawaii			Maui			Kauai			Totals		
	Male	Female	Stot	Male	Female	Stot	Male	Female	Stot	Male	Female	Stot	Totm	Totf	Gtot
<18	38	51	89	1	4	5	8	6	14	4	1	5	51	62	113
18-25	170	164	334	26	15	41	23	17	40	13	8	21	232	204	436
26-35	334	294	628	62	23	85	66	42	108	42	19	61	504	378	882
36-45	224	173	397	36	11	47	52	35	87	28	17	45	340	236	576
46-55	83	93	176	11	4	15	11	10	21	6	7	13	111	114	225
56-65	56	60	116	2	7	9	3	9	12	5	4	9	66	80	146
>65	41	56	97	0	1	1	2	9	11	4	9	13	47	75	122
TOTALS	946	891	1837	138	65	203	165	128	293	102	65	167	1351	1149	2500

SCH= Schiz; DEP= Major depression; DPS= Depression with suicide; DYS= Dysthymia; DSS= Dysthymia with suicide; BIP= Bipolar; ALC= Alcohol; SUB= Substance abuse; OBS= Organic brain syndrome.

STOT= Subtotal; TOTM= Total males; TOTF= Total females; GTOT= Grand Total.

TABLE IX

Distribution by Diagnosis, Island and Sex
Inpatients

	Oahu			Hawaii			Maui			Kauai			Totals		
DX	Male	Female	Stot	Male	Female	Stot	Male	Female	Stot	Male	Female	Stot	Totm	Totf	Gtot
SCH	333	234	567	45	21	66	45	31	76	30	18	48	453	304	757
DEP	128	169	297	11	11	22	23	31	54	4	7	11	166	218	384
DPS	10	16	26	0	3	3	2	3	5	2	0	2	14	22	36
DYS	121	113	234	8	3	11	6	9	15	4	1	5	139	126	265
DSS	19	34	53	3	3	6	4	2	6	0	0	0	26	39	65
BIP	95	103	198	5	2	7	12	18	30	10	12	22	122	135	257
ALC	15	10	25	30	2	32	30	8	38	33	9	42	108	29	137
SUB	12	11	23	7	4	11	21	6	27	5	2	7	45	23	68
OBS	31	16	47	3	3	6	2	0	2	1	3	4	37	22	59
OTHER	182	185	367	26	13	39	20	20	40	13	13	26	241	231	472
	946	891	1837	138	65	203	165	128	293	102	65	167	1351	1149	2500

SCH= Schiz; DEP= Major depression; DPS= Depression with suicide; DYS= Dysthymia; DSS= Dysthymia with suicide; BIP= Bipolar; ALC= Alcohol; SUB= Substance abuse; OBS= Organic brain syndrome.

STOT= Subtotal; TOTM= Total males; TOTF= Total females; GTOT= Grand total.

FIGURE 1 – OUTPATIENTS

DISTRIBUTION BY ISLAND

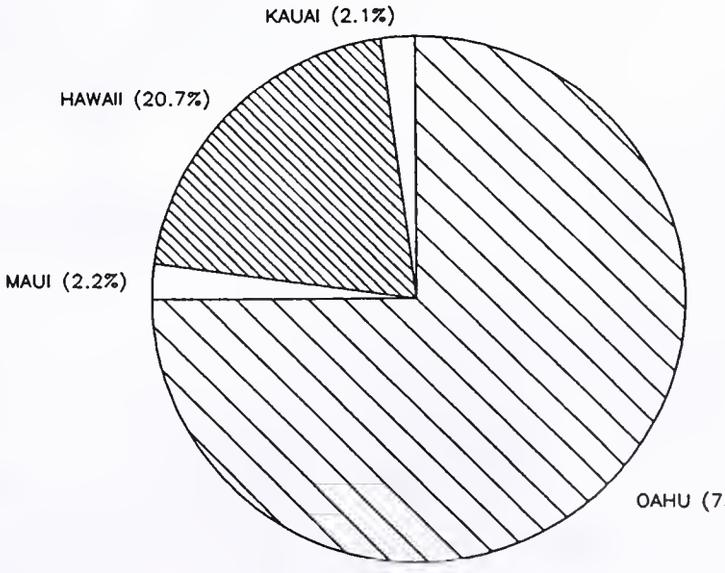


FIGURE 2 – OUTPATIENTS

DISTRIBUTION BY ISLAND AND SEX

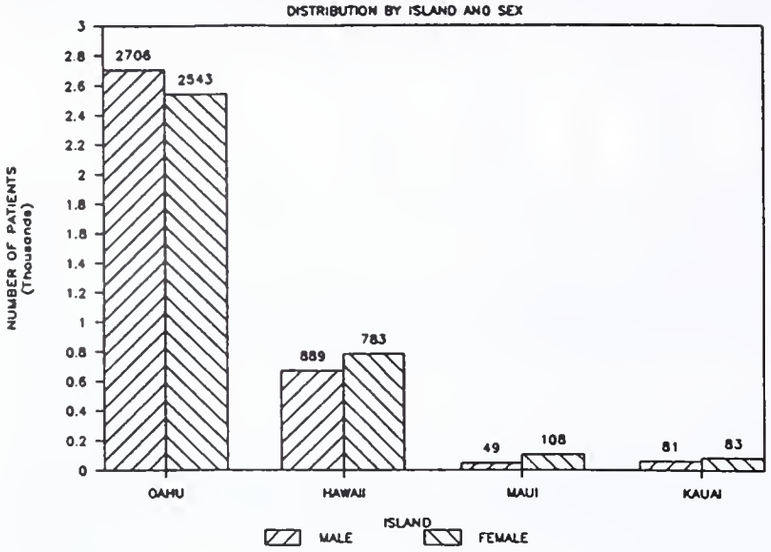


FIGURE 3 – OUTPATIENTS

DISTRIBUTION BY AGE

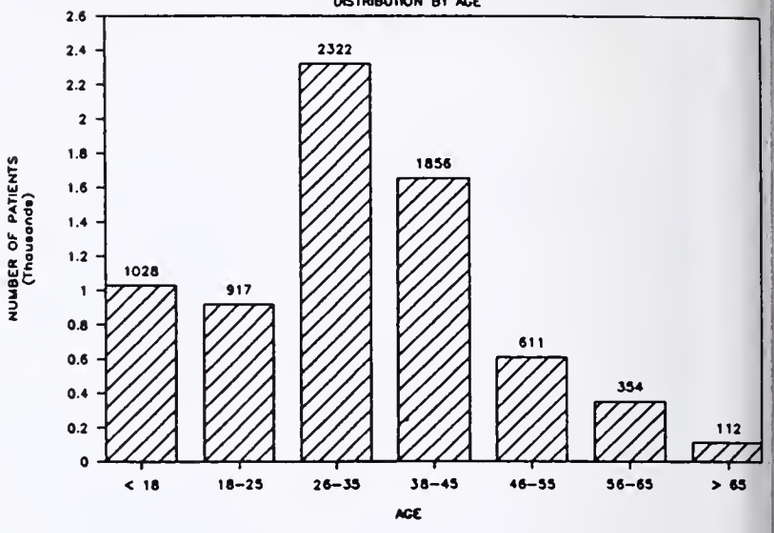


FIGURE 4 – OUTPATIENTS

DISTRIBUTION BY CATEGORIES

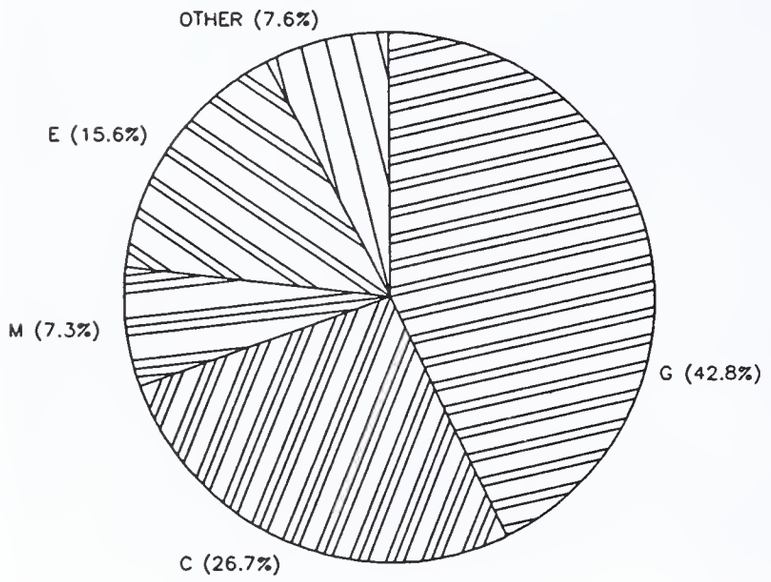


FIGURE 5 – OUTPATIENTS

DISTRIBUTION BY PROVIDERS

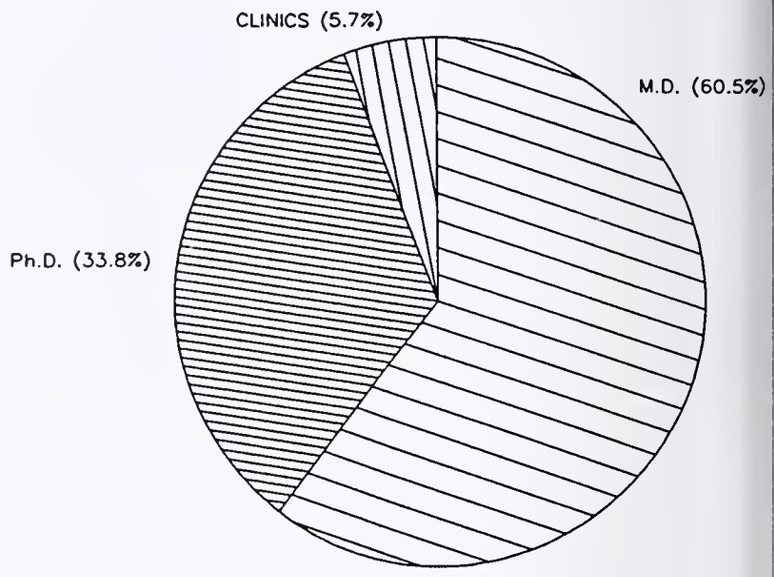


FIGURE 5A – OUTPATIENTS

DISTRIBUTION ON OAHU BY PROVIDERS & SEX

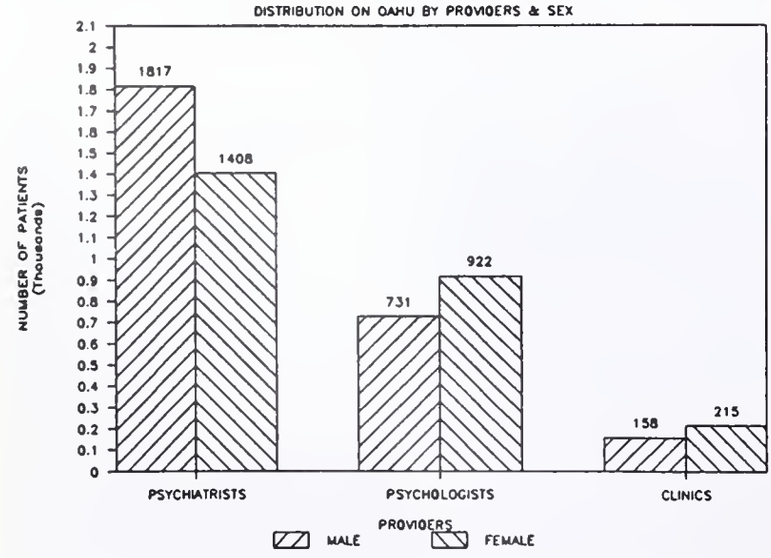
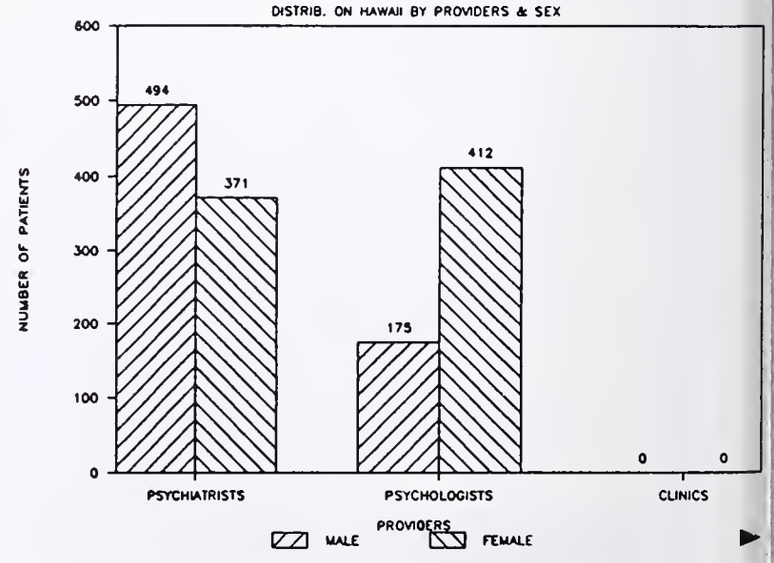


FIGURE 5B – OUTPATIENTS

DISTRIB. ON HAWAII BY PROVIDERS & SEX





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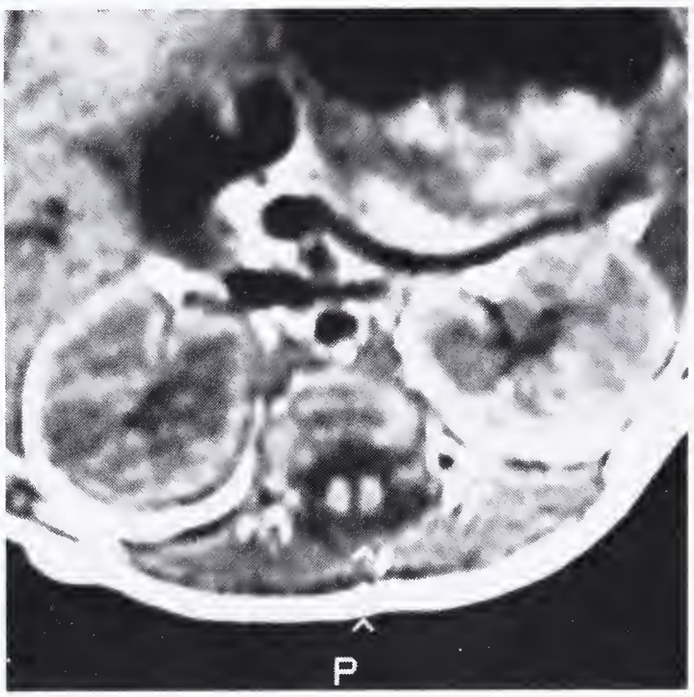
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DIASTEMATOMYELIA

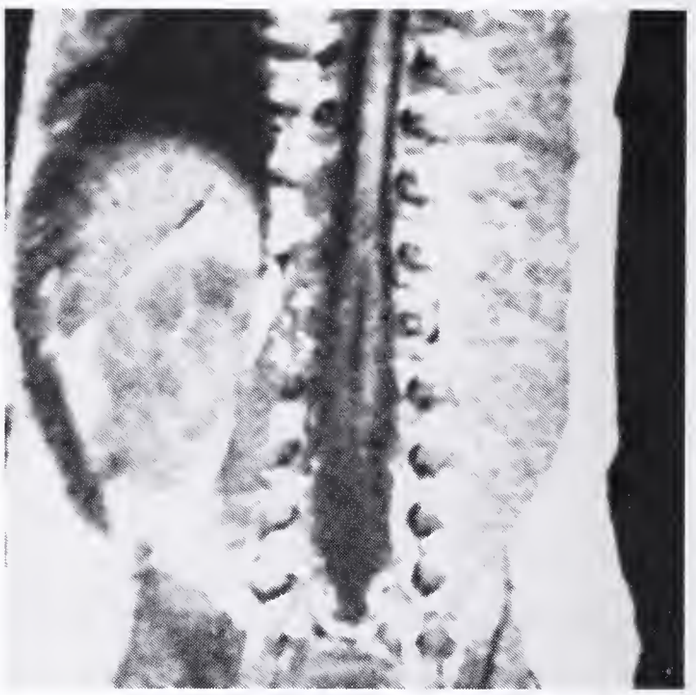
Clinical History: Three week old infant.

1



Axial T_1

2



Coronal T_1

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FIGURE 5C – OUTPATIENTS

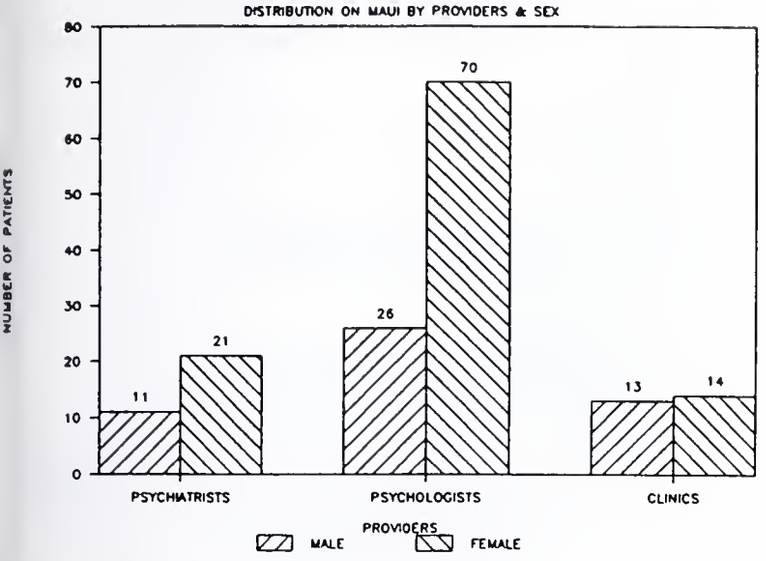


FIGURE 5D – OUTPATIENTS

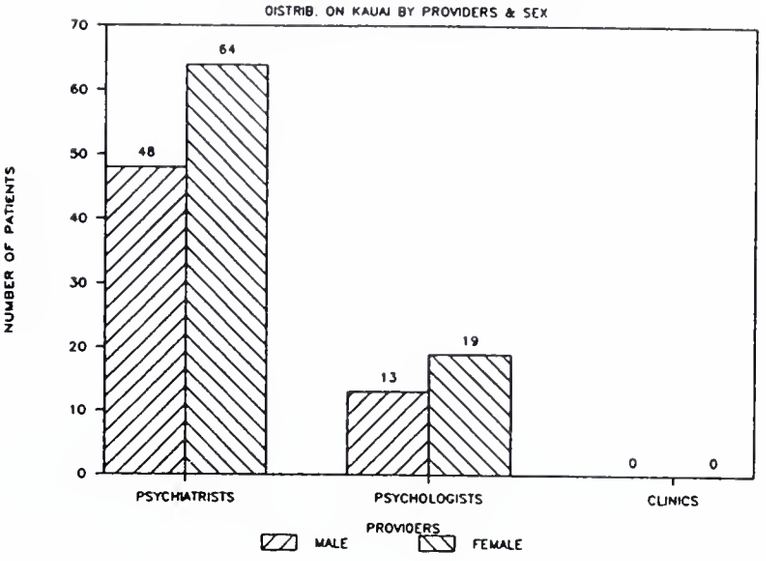


FIGURE 6 – INPATIENTS

DISTRIBUTION BY ISLAND

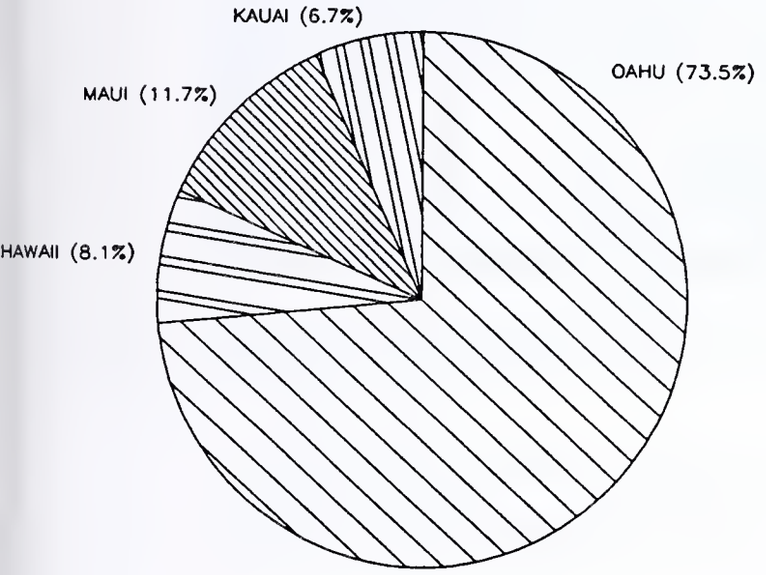


FIGURE 7 – INPATIENTS

OAHU – BY HOSPITALS

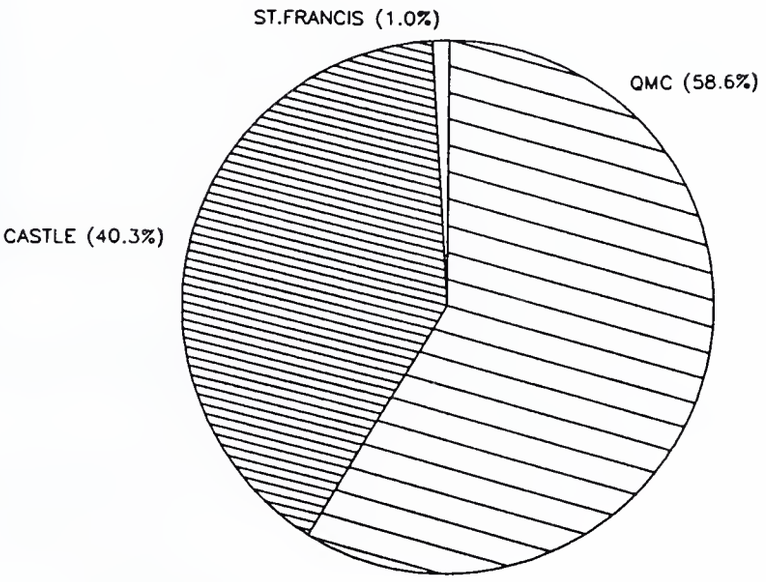


FIGURE 7A – INPATIENTS

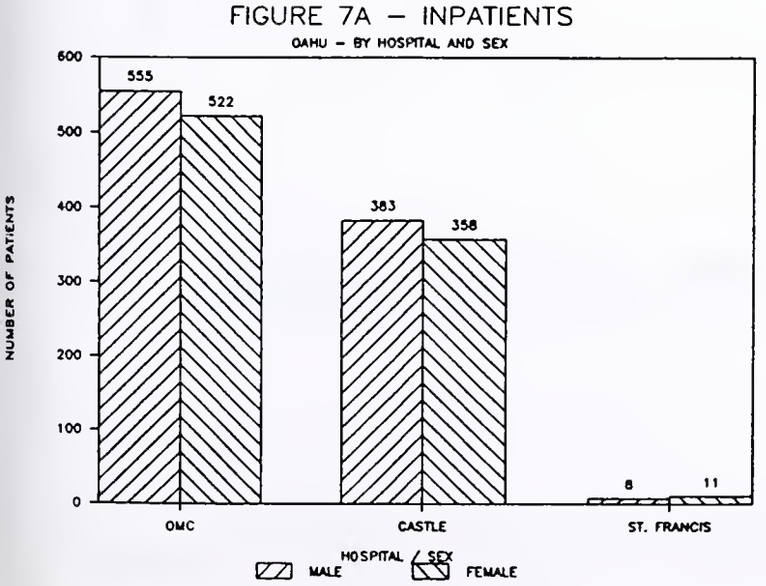


FIGURE 8 – INPATIENTS

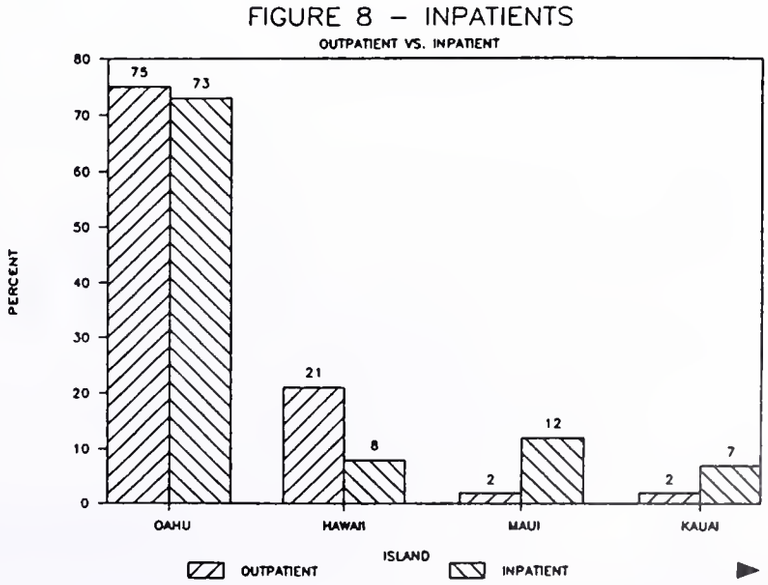


FIGURE 8A – POPULATION AND PATIENTS

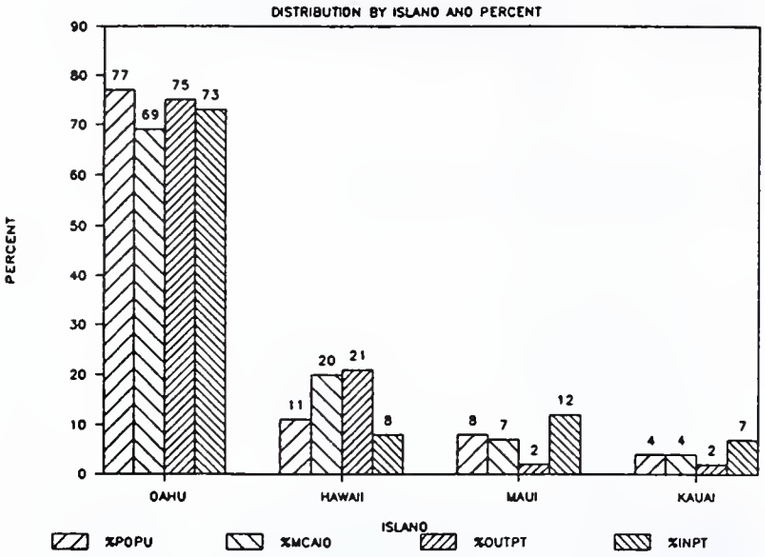


FIGURE 9 – INPATIENTS

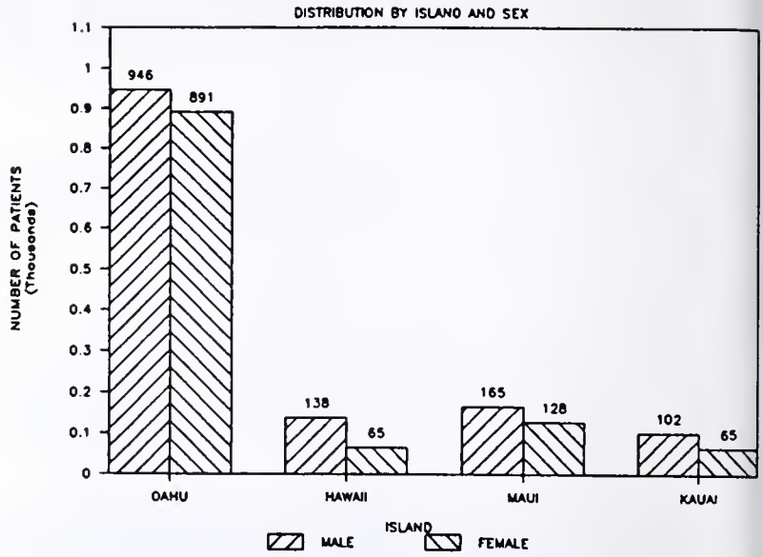


FIGURE 10 – INPATIENTS

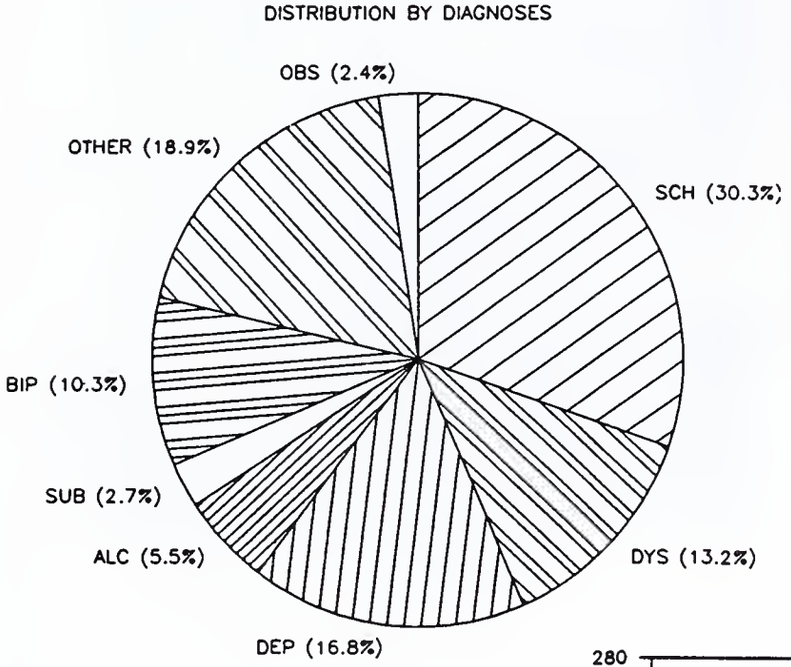


FIGURE 11 – INPATIENTS

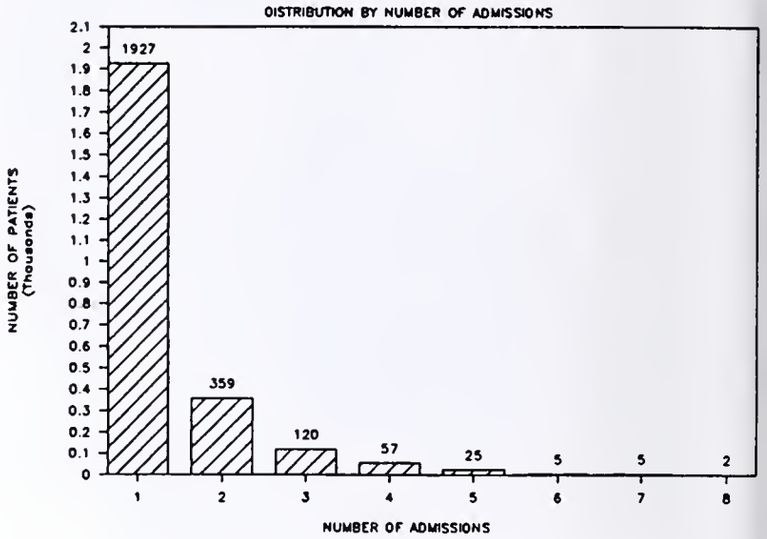
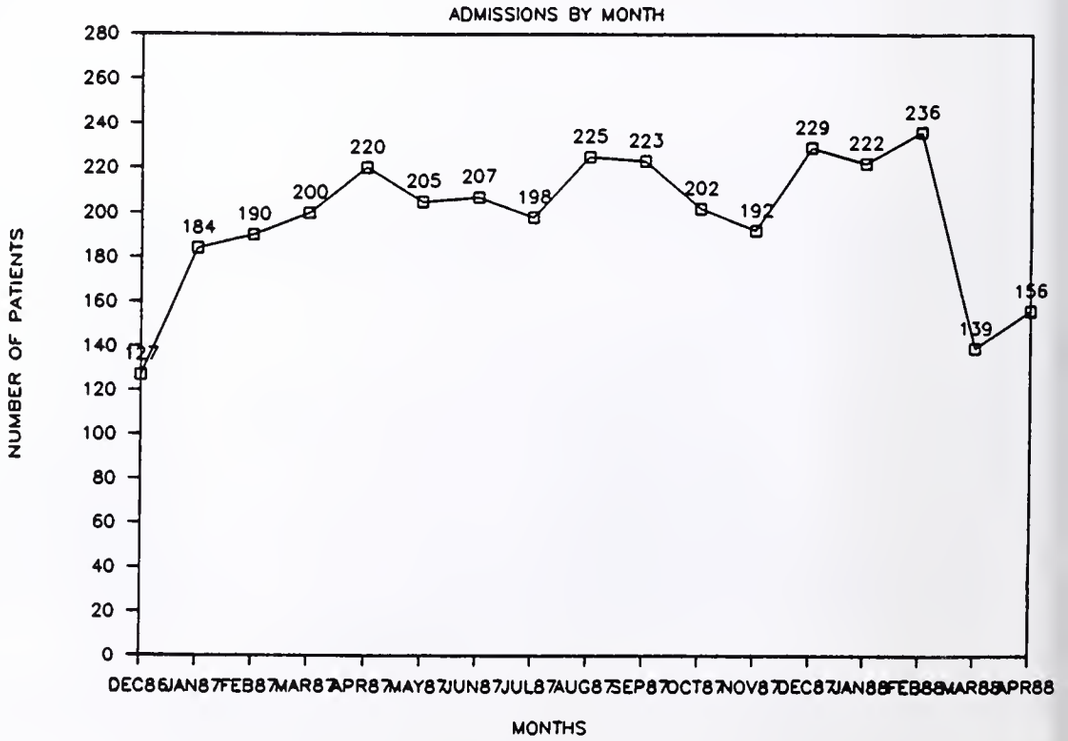


FIGURE 12 – INPATIENTS



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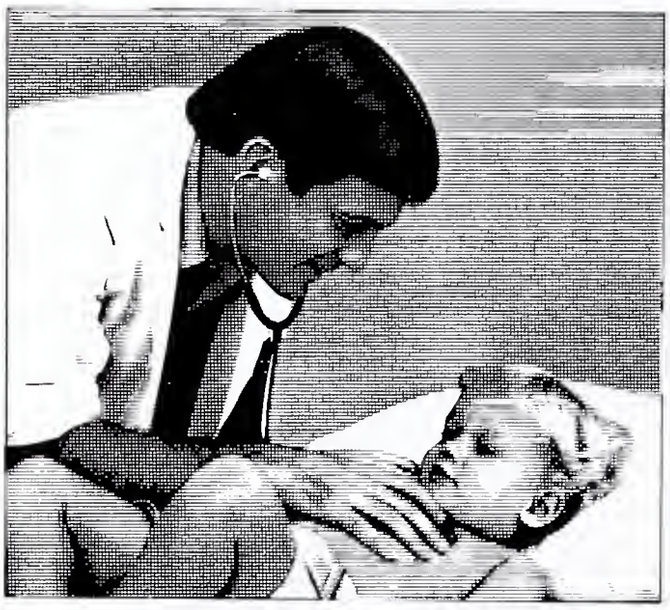
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The dispersion within DRGs as compared with other grouping models

Frank K. Abou-Sayf, MA, MS, PhD*

Twelve classification systems — among them DRG — that could be used as the basis for an inpatient per-case reimbursement system were studied. A dispersion index was constructed to measure the relative homogeneity of the individual "cells" making up each of the 12 models. It was found that the index increased and, along with it, the inequity in reimbursement, as the number of categories making up the model decreased and the model became easier to administer. When both equity in reimbursement and ease of administration were taken into consideration, the DRG system ranked high. Implications for the development of a per-case system were discussed, with emphasis on hospital experience.

Introduction

A desirable feature in any per-case reimbursement system is the tightness of the spread of the smallest elements, "cells," making up the system. Since the major purpose of grouping is usually to derive "typical" values for each group, it follows that the less dispersed the group the more "typical" the values are of the members of the group. When this grouping is done for reimbursement purposes, as is the case with Diagnosis-Related Groups (DRGs), the less disparity there is between the charges within a certain DRG and the more accurate is the reimbursement or, as others put it, the more homogeneous are the "patient's resource needs" within each cell[1]. This homogeneity is recognized as an essential quality in any hospital-reimbursement, case-type classification[1].

Purpose

The purpose of this investigation was to compare a number of grouping models that could be used by a third-party payor as a basis for a per-case reimbursement system. The models that were compared had passed the experimental phase and for the most part were viable candidates for a per-case reimbursement system. The comparisons centered around the relative dispersion of these models, and consideration was given to the practicality of their implementation and use.

* Formerly Chief Statistican, Hawaii Medical Service Association
Currently, Director of Statistics & Research, Kaiser Permanente Hawaii

Literature review

The literature on the effect of the DRG system on cost, clinical and managerial changes is already sizable. Largely following Susan Horn's work on severity-of-illness measures[2,3,4], studies comparing DRG with her classification models can easily be found. Comparisons of DRG with other models are less frequent. In one such study, Ament et al.[5] compared DRG with the 349 List-A categories devised by the Commission on Professional and Hospital Activities (CHPA), and with the 23-level, disease-staging model. Depending on the data set used, either CHPA or DRG performed best, but not the staging model. In another study, Siegel et al.[6] used a statistically derived model to predict length of stay (LOS). Based on empirical analysis, they found this model able to predict LOS for psychiatric conditions more accurately than did DRG. They concluded that the proposed methodology may constitute the basis for a reimbursement scheme that is superior to DRG for all diseases. However, Siegel et al. seem to have overlooked the fact that DRG does not use LOS as the basic grouping criterion — different DRGs may have the same LOSs. What Siegel et al. have done is to compare the ability of their model to DRG in order to predict LOS. Their findings, in effect, indicate that their model is superior to DRG when used to reimburse on a per-diem, not a per-case, basis.

In all these studies, the adequacy of a model for reimbursement purposes is measured in relation to the amount of variation within each cell. One or the other ways of measuring variation are used: Analysis of variance[1], absolute mean deviation, and the coefficient of determination[2]. In our study, the measure of variation used was the coefficient of variation (CV), the same one used by the Health Care Finance Administration (HCFA) in studying DRG dispersion.

Methods

Private, acute-care hospital claims processed between April 1, 1986, and March 31, 1987, at the Hawaii Medical Service Association (HMSA) were used to compare a total of 12 systems that could be used as models for a per-case reimbursement methodology. Only complete cases were considered and claims were subjected to various edits for validity. Government plan claims (Medicare, Medicaid, ►

CHAMPUS) were excluded. The resulting data base consisted of 34,540 cases.

Systems compared

The first three systems examined in the study were DRG and DRG derivatives.

1. Major Diagnostic Category (MDC)

At the outset of the study, this system was a strong candidate and was believed to offer a gradual transition between the vague Type-of-Stay (TOS) system then in use (see below) and the more detailed DRG model.

There are 23 MDCs encompassing all the DRGs. Most MDCs are based on a particular organ system of the body. Some, such as MDC 18, *Infectious and Parasitic Diseases; Systemic or Unspecified Sites,* and MDC 22,

TABLE I

Classification Under DRG and DRG-Derivative Models
The Case of MDC 16

Classification	Total # of Categories		Description	Content of Each Category
By MDC	1	MDC 16:	Diseases and Disorders of the Blood and Blood-Forming Organs and Immunity	DRGs 392 to 399
By MDC-S/M	2	MDC 16-S:	Diseases and Disorders of the Blood and Blood-Forming Organs and Immunity - Surgical	DRGs 392 to 394
		MDC 16-M:	Diseases and Disorders of the Blood and Blood-Forming Organs and Immunity - Medical	DRGs 395 to 399
By DRG	8	DRG 392:	Splenectomy. Age greater than 17	DRG 392
		DRG 393:	Splenectomy. Age 0-17	DRG 393
		DRG 394:	Other OR Procedures of the Blood-Forming Organs	DRG 394
		DRG 395:	Red Blood Cell Disorders. Age greater than 17	DRG 395
		DRG 396:	Red Blood Cell Disorders. Age 0-17	DRG 396
		DRG 397:	Coagulation Disorders	DRG 397
		DRG 398:	Reticuloendothelial and Immunity Disorders. Age greater than 69 and/or CC	DRG 398
		DRG 399:	Reticuloendothelial and Immunity Disorders. Age less than 70 without CC	DRG 399

TABLE II

Disease and Injury Classification

DIC	Description	ICD-9-CM Code
1	Infectious and Parasitic Diseases	1 - 139
2	Neoplasms	140 - 239
3	Endocrine, Nutritional, and Metabolic Diseases and Immunity Disorders	240 - 279
4	Diseases of the Blood and Blood-Forming Organs	280 - 289
5	Mental Disorders	290 - 319
6	Diseases of the Nervous System and Sense Organs	320 - 389
7	Diseases of the Circulatory System	390 - 459
8	Diseases of the Respiratory System	460 - 519
9	Diseases of the Digestive System	520 - 579
10	Diseases of the Genitourinary System	580 - 629
11	Complications of Pregnancy, Childbirth, and the Puerperium	630 - 676
12	Diseases of the Skin and Subcutaneous Tissue	680 - 709
13	Diseases of the Musculoskeletal System and Connective Tissue	710 - 739
14	Congenital Anomalies	740 - 759
15	Certain Conditions Originating in the Perinatal Period	760 - 779
16	Symptoms, Signs, and Ill-Defined Conditions	780 - 799
17	Injury and Poisoning	800 - 999
18	Persons with Potential Health Hazards Related to Communicable Diseases	V01 - V07
19	Persons with Potential Health Hazards Related to Personal and Family History	V10 - V19
20	Persons Encountering Health Services in Circumstances Related to Reproduction and Development	V20 - V28
21	Liveborn Infants According to Type of Birth	V30 - V39
22	Persons with a Condition Influencing their Health Status	V40 - V49
23	Persons Encountering Health Services for Specific Procedures and Aftercare	V50 - V59
24	Persons Encountering Health Services in Other Circumstances	V60 - V69
25	Persons Without Reported Diagnoses Encountered During Examination and Investigation of Individuals and Populations	V70 - V82

Burns, involve multiple organ systems.

An example of an MDC is provided in Table 1, where MDC 16 and its components are shown. This MDC, *Diseases and Disorders of the Blood and Blood-Forming Organs and Immunity,* is made up of eight distinct DRGs, numbered 392 through 399. When this MDC as a whole was investigated for dispersion, all claims from these eight DRGs were considered to be similar and were not differentiated one from the other in any way; they were the components making up the MDC-16 category.

2. Major Diagnostic Category — Surgical/Medical (MDC-S/M)

This model was a viable alternative to overall MDC grouping and was thought to be the second best choice, should statistical analysis of the MDC grouping model prove unfavorable.

In the case of MDC 16, DRGs 392 through 394 represent diagnoses involving surgery; and DRGs 395 through 399 represent non-surgical cases. Breaking down the MDCs into these two distinct categories represents an alternative grouping system. In case of MDC 16, the surgical category would consist of all claims on DRGs 392 through 394, and the medical category would consist of all claims on DRGs 395 through 399. Note that we now have two categories instead of one.

3. Diagnostic-Related Grouping (DRG)

DRGs represent the highest level of specificity among the three classification systems. The 1987 version contains 472 DRGs, numbered 1 through 472, with DRG 438 having been deleted. However, DRGs, 468, 469 and 470 are used for potentially erroneous claims data and were dropped from our comparison. Thus, this model consists of 469 categories.

4. Type of Stay (TOS)

TOS is a per-case reimbursement system that was in use at the time of this investigation. It consists of 10 categories of inpatient stay:

1. Pediatric Medical, up to age 14
2. Pediatric Surgical, up to age 14
3. Pediatric Psychiatric, up to age 19
4. Adult Medical, age 15 and over
5. Adult Surgical, age 15 and over
6. Adult Psychiatric, age 20 and over
7. Obstetrics
8. Newborn - Healthy
9. Newborn - Medical
10. Newborn - Surgical

This classification is of interest because of its inherently widespread categories, the broadest among those investigated.

5. Disease and Injury Classification (DIC)

This is a 25-category classification of morbidity data for the purpose of medical care review, indexing medical records, and statistical data gathering. It was advanced by the United States National Center for Health Statistics and is based on the International Classification of Disease, 9th Revision, Clinical Modification (ICD-9-CM) coding system. The DIC categories are presented in Table 2.

►



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K-DUR™ | Microburst Release System®
(potassium chloride) Sustained Release Tablets

INDICATIONS AND USAGE: BECAUSE OF REPORTS OF INTESTINAL AND GASTRIC ULCERATION AND BLEEDING WITH SLOW-RELEASE POTASSIUM CHLORIDE PREPARATIONS, THESE DRUGS SHOULD BE RESERVED FOR THOSE PATIENTS WHO CANNOT TOLERATE OR REFUSE TO TAKE LIQUID OR EFFERVESCENT POTASSIUM PREPARATIONS OR FOR PATIENTS IN WHOM THERE IS A PROBLEM OF COMPLIANCE WITH THESE PREPARATIONS.

1. For therapeutic use in patients with hypokalemia with or without metabolic alkalosis, in digitalis intoxication and in patients with hypokalemic familial periodic paralysis.

2. For the prevention of potassium depletion when the dietary intake is inadequate in the following conditions: Patients receiving digitalis and diuretics for congestive heart failure, hepatic cirrhosis with ascites, states of aldosterone excess with normal renal function, potassium-losing nephropathy, and with certain diarrheal states.

3. The use of potassium salts in patients receiving diuretics for uncomplicated essential hypertension is often unnecessary when such patients have a normal dietary pattern. Serum potassium should be checked periodically, however, and if hypokalemia occurs, dietary supplementation with potassium-containing foods may be adequate to control milder cases. In more severe cases supplementation with potassium salts may be indicated.

CONTRAINDICATIONS: Potassium supplements are contraindicated in patients with hyperkalemia since a further increase in serum potassium concentration in such patients can produce cardiac arrest. Hyperkalemia may complicate any of the following conditions: Chronic renal failure, systemic acidosis such as diabetic acidosis, acute dehydration, extensive tissue breakdown as in severe burns, adrenal insufficiency, or the administration of a potassium-sparing diuretic (e.g., spironolactone, triamterene).

Wax-matrix potassium chloride preparations have produced esophageal ulceration in certain cardiac patients with esophageal compression due to enlarged left atrium.

All solid dosage forms of potassium chloride supplements are contraindicated in any patient in whom there is cause for arrest or delay in tablet passage through the gastrointestinal tract. In these instances, potassium supplementation should be with a liquid preparation.

WARNINGS: Hyperkalemia—In patients with impaired mechanisms for excreting potassium, the administration of potassium salts can produce hyperkalemia and cardiac arrest. This occurs most commonly in patients given potassium by the intravenous route but may also occur in patients given potassium orally. Potentially fatal hyperkalemia can develop rapidly and be asymptomatic. The use of potassium salts in patients with chronic renal disease, or any other condition which impairs potassium excretion, requires particularly careful monitoring of the serum potassium concentration and appropriate dosage adjustment.

Interaction with Potassium Sparing Diuretics—Hypokalemia should not be treated by the concomitant administration of potassium salts and a potassium-sparing diuretic (e.g., spironolactone or triamterene) since the simultaneous administration of these agents can produce severe hyperkalemia.

Gastrointestinal Lesions—Potassium chloride tablets have produced stenotic and/or ulcerative lesions of the small bowel and deaths. These lesions are caused by a high localized concentration of potassium ion in the region of a rapidly dissolving tablet, which injures the bowel wall and thereby produces obstruction, hemorrhage or perforation.

K-DUR tablets contain micro-crystalloids which disperse upon disintegration of the tablet. These micro-crystalloids are formulated to provide a controlled release of potassium chloride. The dispersibility of the micro-crystalloids and the controlled release of ions from them are intended to minimize the possibility of a high local concentration near the gastrointestinal mucosa and the ability of the KCl to cause stenosis or ulceration. Other means of accomplishing this (e.g., incorporation of potassium chloride into a wax matrix) have reduced the frequency of such lesions to less than one per 100,000 patient years (compared to 40–50 per 100,000 patient years with enteric-coated potassium chloride) but have not eliminated them. The frequency of GI lesions with K-DUR tablets is, at present, unknown. K-DUR tablets should be discontinued immediately and the possibility of bowel obstruction or perforation considered if severe vomiting, abdominal pain, distention, or gastrointestinal bleeding occurs.

Metabolic Acidosis—Hypokalemia in patients with metabolic acidosis should be treated with an alkalinizing potassium salt such as potassium bicarbonate, potassium citrate, potassium acetate, or potassium gluconate.

PRECAUTIONS: The diagnosis of potassium depletion is ordinarily made by demonstrating hypokalemia in a patient with a clinical history suggesting some cause for potassium depletion. In interpreting the serum potassium level, the physician should bear in mind that acute alkalosis per se can produce hypokalemia in the absence of a deficit in total body potassium while acute acidosis per se can increase the serum potassium concentration into the normal range even in the presence of a reduced total body potassium. The treatment of potassium depletion, particularly in the presence of cardiac disease, renal disease, or acidosis requires careful attention to acid-base balance and appropriate monitoring of serum electrolytes, the electrocardiogram, and the clinical status of the patient.

Laboratory Tests: Regular serum potassium determinations are recommended. In addition, during the treatment of potassium depletion, careful attention should be paid to acid-base balance, other serum electrolyte levels, the electrocardiogram, and the clinical status of the patient, particularly in the presence of cardiac disease, renal disease, or acidosis.

Drug Interactions: Potassium-sparing diuretics; see **WARNINGS.**

Carcinogenesis, Mutagenesis, Impairment of Fertility: Long-term carcinogenicity studies in animals have not been performed.

Pregnancy Category C: Animal reproduction studies have not been conducted with K-DUR. It is also not known whether K-DUR can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. K-DUR should be given to a pregnant woman only if clearly needed.

Nursing Mothers: The normal potassium ion content of human milk is about 13 mEq per liter. Since oral potassium becomes part of the body potassium pool, so long as body potassium is not excessive, the contribution of potassium chloride supplementation should have little or no effect on the level in human milk.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS: One of the most severe adverse effects is hyperkalemia (see **CONTRAINDICATIONS, WARNINGS,** and **OVERDOSAGE).** There have also been reports of upper and lower gastrointestinal conditions including obstruction, bleeding, ulceration, and perforation (see **CONTRAINDICATIONS** and **WARNINGS);** other factors known to be associated with such conditions were present in many of these patients.

The most common adverse reactions to oral potassium salts are nausea, vomiting, abdominal discomfort, and diarrhea. These symptoms are due to irritation of the gastrointestinal tract and are best managed by taking the dose with meals or reducing the dose.

Skin rash has been reported rarely.

OVERDOSAGE: The administration of oral potassium salts to persons with normal excretory mechanisms for potassium rarely causes serious hyperkalemia. However, if excretory mechanisms are impaired or if potassium is administered too rapidly intravenously, potentially fatal hyperkalemia can result (see **CONTRAINDICATIONS** and **WARNINGS**). It is important to recognize that hyperkalemia is usually asymptomatic and may be manifested only by an increased serum potassium concentration and characteristic electrocardiographic changes (peaking of T-waves, loss of P-waves, depression of S-T segment, and prolongation of the QT-interval). Late manifestations include muscle-paralysis and cardiovascular collapse from cardiac arrest.

Treatment measures for hyperkalemia include the following:

1. Elimination of foods and medications containing potassium and of potassium-sparing diuretics.
2. Intravenous administration of 300 to 500 ml/hr of 10% dextrose solution containing 10–20 units of insulin per 1,000 ml.
3. Correction of acidosis, if present, with intravenous sodium bicarbonate.
4. Use of exchange resins, hemodialysis, or peritoneal dialysis.

In treating hyperkalemia, it should be recalled that in patients who have been stabilized on digitalis, too rapid a lowering of the serum potassium concentration can produce digitalis toxicity.

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DISPERSION WITHIN DRGs

6. Disease and Injury Classification — Surgical/Medical (DIC-S/M)

In addition to diagnosis codes, the availability of procedure codes (also using ICD-9-CM) was considered, the presence or absence of a procedure code on the claim indicating a surgical case and its absence a medical case. This breakdown doubles the number of categories to 50.

7. ICD-9-CD Diagnosis Code Classifications — 3 Digits (Dx 3)

This and the following model were used at the time of this writing by Blue Cross/Blue Shield of Maryland.

The ICD-9-CM diagnosis code book identifies about 1,080 diagnosis codes that are made up of three digits. A per-case reimbursement classification system could be built by dividing claims into these 1,080 categories and requiring up to 1,080 different rates to be set.

8. ICD-9-CM Diagnosis Code Classification — 4 Digits (Dx 4)

A fourth digit was added to each major three-digit code in the ICD-9-CM system when the necessary detail could not be accommodated by three digits. An illustration of this and the following classification system in the instance of inguinal hernia is presented in Table 3.

9. ICD-9-CM Diagnosis Code Classification — 5 Digits (Dx 5)

As shown in Table 3, additional detail is obtained by adding a fifth digit to the codes, thus leading to a more numerous set of rates.

10., 11. and 12. Surgical/Medical Breakdown of Systems 7, 8, and 9

These three systems consist of breaking down Systems 7, 8 and 9 (above) into Surgical and Medical, again based on the availability or absence on the claim of a procedure code along with the diagnosis code. Dx 5-S/M is then the most detailed level of categories among the dozen investigated (compared with TOS which is at the other extreme).

Results

The results are summarized in Table 4, where the 12 systems have been ranked in order of the increasing dispersion index. The billed charges of 23 acute-care and psychiatric hospitals were used to calculate dispersion.

The Dispersion Index (DI)

To measure dispersion (or spread), the coefficient of variation (CV), a measure that is amenable to comparison among heterogenous distributions, was used. The smaller the CV, the less dispersed the distribution. For each cell making up a system, a CV was calculated unless the cell contained only one case. Thus, nearly 3,517 CVs were calculated for Dx-5-S/M, 459 for the DRG system, and so on.

The next step consisted of obtaining only one overall measure of dispersion for each of the 12 systems being investigated. The mean of all CVs within each system was excluded, since such a measure will conceal cells with high CVs by canceling them out with cells with low CVs. A better measure would be one that reflects the count

TABLE III

Classification as a Factor of ICD-9-CM Digits
The Case of Inguinal Hernia

Classification	Total Number of Categories	ICD-9-CM Code	Description
Dx 3	1	550	Inguinal hernia
Dx 4	3	550.0	Inguinal hernia with gangrene
		550.1	Inguinal hernia with obstruction without mention of gangrene
		550.9	Inguinal hernia without mention of obstruction or gangrene
Dx 5	12	550.00	Inguinal hernia with gangrene, unilateral or unspecified
		550.01	Inguinal hernia with gangrene, unilateral or unspecified, recurrent
		550.02	Inguinal hernia with gangrene, bilateral
		550.03	Inguinal hernia with gangrene, bilateral, recurrent
		550.10	Inguinal hernia with obstruction without mention of gangrene, unilateral or unspecified
		550.11	Inguinal hernia with obstruction without mention of gangrene, unilateral or unspecified, recurrent
		550.12	Inguinal hernia with obstruction without mention of gangrene, bilateral
		550.13	Inguinal hernia with obstruction without mention of gangrene, bilateral, recurrent
		550.90	Inguinal hernia without mention of obstruction or gangrene, unilateral or unspecified
		550.91	Inguinal hernia without mention of obstruction or gangrene, unilateral or unspecified, recurrent
		550.92	Inguinal hernia without mention of obstruction or gangrene, bilateral
		550.93	Inguinal hernia without mention of obstruction or gangrene, bilateral, recurrent

of cells having high CVs in each system; the higher this count, the less desirable the system. The "Dispersion Index" (DI) was constructed to indicate the proportion of cells having a CV larger than 1.00 in each system. Here, too, the larger this index, the greater the proportion of inaccurate reimbursement rates. Thus, the data in Table 4 indicate that about 8% of the rates will be in sufficiently accurate under a Dx 5-S/M model, while as many as 90% will be so under the TOS model.

The number of categories shown in Table 4 is the number of filled cells (with at least one case) that were found in our data base. It is not necessarily the total number of cells available in the model. So, whereas there were 459 cells containing at least one case in the DRG model, the total number of cells available is 469. (DRGs, 468, 469, 470, the "rejects", were deleted from the data base, the reader will remember.) Given the large number of claims used in this study, one can safely assume that the blank cells represent rare occurrences.

TABLE IV

Relative Dispersion and Number of Categories for the 12 Systems

System	Dispersion Index	Number of Categories
Dx 5 - S/M	8.30	3,517
Dx 4 - S/M	10.05	2,978
Dx 5	11.40	2,763
Dx 4	14.10	2,213
Dx 3 - S/M	20.34	1,185
Dx 3	27.40	745
DRG	31.59	459
DIC - S/M	76.00	49
DIC	76.00	25
MDC - S/M	81.40	43
TOS	90.00	10
MDC	91.67	24

Interpretation

Table 4 depicts clearly the inverse relationship between the DI and the number of categories. As the number of categories increase, each one becomes more finite, hence more homogenous. Not surprisingly, the increase in the number of digits in the diagnosis codes increases accuracy of grouping, so does the breakdown into S/M.

However, this increase in accuracy is done at the cost of ease of manageability: The greater the number of reimbursement rates, the harder it is to administer a system. Thus, the most accurate payment system, Dx 5-S/M, with a DI of 8.30, is also likely to be the hardest one to manage, requiring the determination of over 3,500 possibly different rates. Conversely, the TOS model, having one of the lowest dispersion indices, is the easiest to administer, being made up of only 10 categories.

It is also interesting to note the standing of DRG relative to the other systems. Given all the input needed to determine a proper DRG (multiple diagnoses and procedures, age, complications, pre-existing conditions, signs and symptoms, discharge status), it would perhaps be expected that less variability would exist within a DRG than what this study shows. However, in spite of DRG's relatively small number of categories, its relatively low DI sets it far apart from the next system below it in Table 4 (a DI of 31.59 as compared with 76.00 for DIC-S/M). This outcome clearly places DRG among the viable systems for a per-case reimbursement type.

Finally, the MDC grouping model and its S/M derivative, for which this organization had high hopes as a smooth transition from TOS to DRG, proved particularly ►

disappointing. The large jump in the DI between DRG and MDC was so substantial that the latter was disregarded.

Discussion: Implications for the Development of a Per-Case System

To third-party payors and hospitals alike, models yielding widely spread cells are not desirable. Such models will distribute funds unfairly and there is no telling which party involved will end up being at a disadvantage. In addition to accuracy of payment, an important consideration in any per-case reimbursement system is ease of administration. The calculation and administration of a five-digit number of rates is prohibitive, especially when different rates are to be computed for different hospitals. These arguments lead to the elimination of the systems that rank at both extremes of Table 4. Systems situated in the middle of the rankings are the attractive ones. Some organizations, such as the Maryland Blue Cross/Blue Shield, use a variation of these systems — a combination of Dx 3, Dx 4 and DRG — as the basis for a per-case reimbursement system[7].

In light of the findings of our study, a DRG model is an attractive option. However, it is suggested that it is perhaps attractive more by elimination than because of its innate virtues.

Later attempts to improve the way medical conditions are grouped have resulted in a number of elaborate methodologies. Examples of these are the Computerized Severity Index (CSI), Patient Management Categories (PMC), and Disease Staging. These models may well prove to be promising. At the present time, however, an important factor tilts the balance in favor of DRG: Its familiarity to hospitals. Given a few years of DRG experience under Medicare, most hospitals accept more readily DRG than a system with which they have no experience.

One last issue relates to peer grouping. By many accounts[8], DRG does not take into consideration severity of illness enough to allow one flat rate per DRG to be allowed equitably at all hospitals. In certain geographic regions, especially large ones, one or more large hospitals might specialize in some medical conditions, investing in expensive but rarely available equipment and attracting specialists in these areas of care. Such hospitals often attract the more complicated cases covered by the same DRG. One way to recognize and to adjust for these differences is to divide hospitals into peer groups, taking into consideration specialization, among other factors. For the same DRG, peer groups could be reimbursed differently from each other; and hospitals within same peer group could get reimbursed similarly. Statistically, peer grouping in DRG should minimize the reimbursement variance. This concept was one of the bases upon which HMSA developed its DRG-based, variable peer-group, per-case reimbursement system that is presently in effect. ■

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CONTINUING MEDICAL EDUCATION

(Continued from page page 220)

Nov. 7-14, 1989	Annual Clinical Meeting, District I, American College of Obstetricians and Gynecologists. Contact: Colpitts Medical Meeting Planners, 450 Providence Hwy., Dedham/Boston, MA 02026-6868, 1-800-972-7777; 617-326-7800. Location: Maui and Kauai.
Nov. 10-12, 1989	Hawaii Section ACOG Annual Educational Meeting. Contact: Robyn Izumi, 1319 Punahou St. #816, Honolulu, HI 96826, 808-948-6949. Location: Stouffer Waiohai Beach Resort, Kauai.
Nov. 10-12, 1989	133rd Hawaiii Medical Association Annual Scientific Meeting. Contact: Jennie Asato, 1360 S. Beretania St., Honolulu, HI 96814, 808-536-7702. Location: Westin Maui.
Dec. 24-30, 1989	Advances in Medicine '89. Symposia Maui Inc. and co-sponsored by the Hawaii Medical Association. Contact: Paula Harrison, Symposia Maui Inc., P.O. Box 833, Makawao, Maui, 96768, 808-878-6757. Location: Royal Lahaina Resort, Maui.
1990	
Jan. 22-26, 1990	8th Annual Hawaii Conference on Gastrointestinal and Hepatic Disease.The Honolulu Medical Group Research & Education Foundation and co-sponsored by the Hawaii Medical Association. Contact: Gary Glober, MD, 1380 Lusitana St., Suite 701, Honolulu, HI 96813, 808-536-1021. Location: Hyatt Waikoloa, Big Island. ■

Readers Express Their Views

Is nothing sacred? There is a skeleton in every house.

For years the peerless professor of ophthalmology at Johns Hopkins, A.E. Maumenee, has exemplified virtue, wisdom and scholarly demeanor, as well as being a just plain "good guy." Now it seems that respected professor is involved in a complaint whereby the moistening agent tretinoin is apparently not what it was cracked up (skidded up? slimed up?) to be. Not only was the original research found to be wanting, but a public stock offering of the production company may involve snake oil and inside manipulation. "I am not a good business man," said the professor. Welcome to the club, esteemed professor. A few doctors are sharp and quite capable in the entrepreneurial milieu, but most of us are lambs.

Pandemonium didn't reign — it poured!

In a barrage of bulk mailings from various sources, and with different approaches, Hawaii's senior citizens (and others who happen to be in the junk mail listings) were informed that the cataract surgery sky is falling. As of April 1, 1989, new rules were written, which will control just who can and who cannot have federally funded cataract surgery, orchestrated by your local PRO (HMSA). Therefore, to paraphrase that 1950s jazz singer Nellie Lutcher (and if you remember her, I will buy your lunch) "Hurry on down to my house, Baby — and get your cataracts reeeeemooved! tra-la! Don't be late; don't trust the fates; your vision will be great; we still have dates." Or, as P.T. Barnum once said, "Every crowd has a silver lining." The result of the announcement was a stream of phone calls from frightened patients, fearful that their surgery would not be reimbursed by Medicare. The name of the game is MARKETING — ah, what a peaceful medical world it once was.

Talk about peer review and price controls:

- The Code of Hammurabi ensured that the ophthalmologic surgeon could not demand a greater fee than 10 shekkels of silver for a successful operation, and that he would be penalized by having his hands cut off if the operation was unsuccessful.
- In 1860, Dr. S. Weir Mitchell performed an experiment that showed that the administration of saccharin substances to frogs produced cataracts. Please pass the Nutrisweet!
- Never make a decision that you can get someone else to make.
- Expansion means complexity and complexity decays.

Aloha and keep the faith.

—Russell T. Stodd, MD

From the WEATHERVANE
Vol. 6, No. 3 April 1989
Hawaii Ophthalmological Society Newsletter



INSTRUCTIONS TO AUTHORS HAWAII MEDICAL JOURNAL

SUMMARY OF REQUIREMENTS

Type manuscript double spaced, including title page, abstract, text, acknowledgments, references, tables, and legends.

Each manuscript component should begin on a new page, in this sequence:

Title
Abstract and key words
Text
Acknowledgments
References
Tables: each table, complete with title and footnotes, on a separate page.
Legends for illustrations

Illustrations must be good quality, unmounted glossy prints usually 12.7 by 17.3 cm (5 by 7 in.) but no larger than 20.3 by 25.4 cm (8 by 10 in.).

SUBMISSION OF MANUSCRIPTS

Mail the manuscript in a heavy paper envelope, enclosing the manuscript and figures in cardboard, if necessary, to prevent bending of photographs during mail handling. Place photographs in a separate, smaller, heavy paper envelope.

Manuscripts should be accompanied by a cover letter from the author who will be responsible for correspondence regarding the manuscript. The cover letter should contain a statement that the manuscript has been seen and approved by all authors. Include copies of any permissions needed to reproduce published material or to use illustrations of identifiable subjects. Mail to Editor, Hawaii Medical Journal, c/o Hawaii Medical Association, 1360 South Beretania St., second floor, Honolulu, Hawaii 96814.

PREPARATION OF MANUSCRIPT

Type manuscript on white bond paper, 21.6 by 27.9 cm (8½ by 11 in.) with margins of at least 2.5 cm (1 in.). Type only on one side of paper. Use double spacing throughout, including title page, abstract, text, acknowledgments, references, tables, and legends for illustrations. Begin each of the following sections on separate pages: Title Page, Abstract, Text, Acknowledgments, References, Tables and Legends. Number pages consecutively, beginning with the Title Page. Type the page number in the upper right-hand corner of each page.

Manuscripts will be reviewed for possible publication with the understanding that they are being submitted to one journal at a time and have not been published, simultaneously submitted, or already accepted for publication elsewhere. This does not preclude consideration of a manuscript that has been rejected by another journal or of a complete report that follows publication of preliminary findings elsewhere, usually in the form of an abstract. Copies of any possibly duplicative published material should be submitted with the manuscript that is being sent for consideration.

TITLE PAGE: The title page should contain (1) the title of the article, which should be concise but informative; (2) a short running head or footline of no more than 40 characters (count letters and spaces) placed at the top of the title page; (3) first name, middle initial, and last name of each author, with highest academic degree(s); (4) name of department(s) and institution(s) to which the work should be attributed; (7) name and address of author to whom requests for reprints should be addressed, or statement that reprints will not be available from the author; (8) the source(s) of support in the form of grants, equipment, drugs, or all of these.

TEXT: The text of observational and experimental articles is usually — but not necessarily — divided into sections with the headings: Introduction, Methods, Results, and Discussion. Long articles may need subheadings within some sections to clarify their content, especially the Results and Discussion sections.

Introduction: Clearly state the purpose of the article. Summarize the rationale for the study or observation. Give only strictly pertinent references, and do not review the subject extensively.

Methods: Describe your selection of the observational or experimental subjects (patients or experimental animals, including controls) clearly. Identify the methods, apparatus (manufacturer's name and address in parentheses), and procedures in sufficient detail to allow other workers to reproduce the results. Give references to established methods, including statistical methods; provide references and brief descriptions of methods that have been published but are not well known; describe new or substantially modified methods, give reasons for using them, and evaluate their limitations.

Include numbers of observations and the statistical significance of the findings when appropriate. Detailed statistical analyses, mathematical derivations, and the like may sometimes be suitably presented in the form of one or more appendices.

Results: Present your results in logical sequence in the text, tables, and illustrations. Do not repeat in the text all the data in the tables and/or illustrations — emphasize or summarize only important observations.

Discussion: Emphasize the new and important aspects of the study and conclusions that follow from them. Do not repeat in detail data given in the Results section. Include in the Discussion the implications of the findings and their limitations and relate the observations to other relevant studies. Link the conclusions with the goals of the study but avoid unqualified statements and conclusions not completely supported by your data. Avoid claiming priority and alluding to work that has not been completed. State new hypotheses when warranted, but clearly label them as such. Recommendations, when appropriate, may be included.

ACKNOWLEDGMENTS: Acknowledge only persons who have made substantive contributions to the study. Authors are responsible for obtaining written permission from everyone ackowledged by name because readers may infer their endorsement of the data and conclusions.

REFERENCES: Number references consecutively in the order in which they are first mentioned in the text. Identify references in text, tables, and legends by arabic numerals. References cited only in tables or in legends to figures should be numbered in accordance with a sequence established by the first identification in the text of the particular table or illustration.

Use the form of references adopted by the U.S. National Library of Medicine and used in *Index Medicus*. The titles of journals should be abbreviated according to the style used in *Index Medicus*.

TABLES: Each table and figure must be camera-ready, i.e., black-and-white glossy stat or velox. All copy within the table must be typeset. Desktop, computer-generated systems may be used if print quality is comparable to typeset copy. Type should be set in Helvetica. Headlines should be boldface, all capital. Subheads should be boldface, upper and lower case. All other copy should be medium face. Most tables are published 1½ columns or 3½" wide. Height should be proportional. Editorial copy is 9 pt. Copy in tables should be proportional in terms of size. Do not use screens. Tables should be bordered with thin, single line border. Number tables consecutively and supply a brief title for each. Give each column a short or abbreviated heading. Place explanatory matter in footnotes, not in the heading. Explain in footnotes all nonstandard abbreviations that are used in each table. For footnotes, use the following symbols in this sequence: *, **, †, ‡, §, |, ¶, †† . . . Identify statistical measures of variations such as SD and SFM.

ILLUSTRATIONS: Submit the required number of complete sets of figures. Figures should be professionally drawn and photographed; freehand or typewritten lettering is unacceptable. Instead of original drawings, roentgenograms, and other material, send sharp, glossy black-and-white photographic prints, usually 12.7 by 17.3 cm (5 by 7 in.) but not larger than 20.3 by 25.4 cm (8 by 10 in.). Letters, numbers and symbols should be clear and even throughout, and of sufficient size that when reduced for publication each item will still be legible. Titles and detailed explanations belong in the legends for illustrations, not on the illustrations themselves.

Each figure should have a label pasted on its back indicating the number of the figure, the name of the authors, and the top of the figure. Do not write on the back of the figures or mount them on cardboard, or scratch or mar them using paper clips. Do not bend figures.

LEGENDS FOR ILLUSTRATIONS: Type legends for illustrations double spaced, starting on a separate page with arabic numerals corresponding to the illustrations. When symbols, arrows, numbers, or letters are used to identify parts of the illustrations, identify and explain each one clearly in the legend. Explain internal scale and identify method of staining in the photomicrographs.

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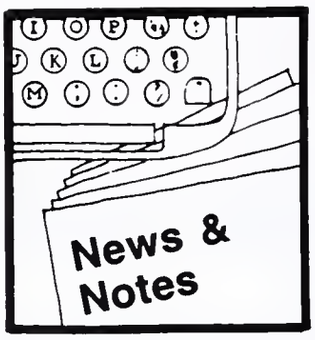
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Conference Humor

Rheumatologist Eric Gershwin was visiting professor from UC Davis in March . . . It seems that Eric's wife is a professor at the vet school and she got a call from the Sacramento Zoo about an elephant with bursitis . . . "How to do an arthrocentesis . . . I took a 6 gauge needle and aspirated 500 cc of fluid which showed uric acid crystals . . . I had no idea how much colchicine to give so I mixed a batch and force-fed the elephant . . . Well, you know how diarrhea is a hallmark of colchicine toxicity . . . The zoo had to be closed for four days and the nearby residents had to be evacuated. The stench was noticed over several counties . . ."

Eric Gershwin claims that these three big lies are heard in every hospital: Patient: "The check is in the mail"; Nurse: "Oh doctor, it didn't happen on my shift"; Chief of Staff: "I want you to remember one thing above everything else"

Life In These Parts

"A Carrot A Day Keeps Cancer Away" . . . Abe Nomura, director of the Japan-Hawaii Cancer Study reports that "people with low levels of serum beta carotene showed a greater risk of developing lung cancer than those with higher levels . . . Heavy cigarette smokers (more than a pack a day) with low serum beta carotene had a seven times greater risk than the control group . . . the study has been looking into the benefits of beta carotene since 1971" (Gleaned from Barbara Burke's column)

AHA Funding in Hawaii . . . This year the American Heart Association, Hawaii Affiliate, is funding 12 research projects for a total $235,000 . . . Kerry Yasunobu, U of H School of Medicine, is receiving $99,000 over a three-year period in a grant from the National Research Program of the AHA . . . Richard Guillory, U of H School of Medicine, who has a $2,000 grant to conduct cholesterol research notes that the AHA, Hawaii Affiliate, now spends 15% of its gross divisible income on research projects within the State . . .

Child Care Legislation . . . Legislators were considering the following measures to give children a boost in early education and services for special problems:

- An early childhood education plan to start in 1994-95 and to include help for parents in developing skills.
- Provide early intervention services for toddlers up to 3 years old.
- Expand Medicaid benefits for pregnant women and children to age 6.
- Give employers who provide child-care programs an income tax credit equal to half their child-care expenses.
- Establish a Children's Foundation with funds channeled through the Governor's Office for creative and innovative programs and services to prevent juvenile delinquency and neglect.

Rep. Dennis Arakaki and Sen. Mary Jane McMurdo, the human services leaders, are looking to House Bill 69 as the omnibus child-care measures . . .

Universal Health Insurance for Hawaii . . . One in four nationally and one in 20 in Hawaii are uninsured medically and the number is expected to grow with the escalating health-care costs and premiums . . . The Waihee administration's universal health insurance proposal could be good news for some 30,000 working poor who are not covered by their part-time jobs (Hawaii law requires employers to offer prepaid health insurance to people who work at least 20 hours a week) and for taxpayers who pick up the tab for emergency hospital care of the poor. The Waihee plan would cost $10 million a year. To control costs, the State proposes to mandate only outpatient coverage, but Health Director John Lewin expects insurers competing for the state's business to offer some hospital coverage — perhaps for children . . .

Hepatitis A Outbreak . . . In January, Kapiolani Medical Center had 11 premies and 27 hospital staffers come down with Hepatitis A. Investigation confirmed suspicions that a donor's contaminated blood given to two premies in the Neonatal ICU caused the outbreak. The donor didn't know he had contracted the virus from his roommate because the roommate's doctor failed to notify DOH and initiate preventive measures . . . Eugene Pon, state epidemiologist crusaded, "The whole thing could have been prevented if the physician had made a report to us." Robert Worth, chief of Communicable Disease Division was kinder, "Kapiolani Medical Center is blameless in the outbreak and did extremely well afterward to protect staff and patients."

News Update: Marion Melish feels that coffee cups could have played a role in the hospital epidemic . . .

Unified Health Care Training Program . . . A.A. Smyser reports in his column, "Hawaii's World," that U of H School of Medicine Acting Dean Christian Gulbrandsen and MEDEX director Richard L. Smith are targeting on a medical training program called the Unified Health Care Training Program where high school graduates can be trained in a new College of Health Sciences. The advantages would be quicker orientation of students into health services where manpower needs are steadily increasing without finishing college or graduate school . . . The key attraction would be a curriculum combining work with study in hospitals and elsewhere . . . MEDEX, a 16-year-old program was launched in Micronesia, then moved to Thailand, Guyana, Pakistan, Lesotho and Papua, New Guinea. The program has had its failures as well as successes . . . In Pakistan, anti-American sentiment led to its failure . . .

Laser Angioplasty . . . In March, QMC announced that laser angioplasty had been used successfully on eight patients. Ed Chesne, chief of Cardiovascular Service reports that the first laser angioplasty was performed on January 26 and the early results have been good. A local anesthetic is used and the patients released after overnight observation. The $150,000 laser probe is manufactured by Trimedyne Inc. of Santa Ana, Calif. Involved in the initial procedures were surgeons Collin Pang, Harvey Takaki, and Eugene Magnier and cardiologist John Cogan.

The Ritalin Controversy . . . A. Dennis Clarke, president of the Citizens Commission of Human Rights describes Ritalin prescription for hyperactive children as "One of the biggest lies that has ever been told — that it is a 'smart pill.' "

Ederhard Mann, director of the Hyperactivity Clinic of Kapiolani Counseling Clinic says, "When a child is hyperactive, it's usually teachers who first notice. In school, children are expected to behave in a manner appropriate to their age group. Those who don't tend to stick out and get noticed."

Joseph Young, executive board member of the American Academy of Pediatrics, Hawaii Chapter, reports, "A child who acts up in the classroom is not necessarily suffering from attention-deficient hyperactivity disorder, the ►

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medical term for hyperactivity. Teachers, parents and doctors may all be defining hyperactivity differently — That's why the American Academy of Pediatrics, Hawaii Chapter is taking a closer look at hyperactivity, its diagnosis and treatment. Because the diagnosis is based on subjective information, we will continue to have a vast array of kids either overdiagnosed or underdiagnosed. The medical community and the DOE have no set standards for defining hyperactivity. Although the diagnosis is left to doctors, teachers may label a child hyperactive and suggest medical intervention when it is not necessary. Even if hyperactivity is properly diagnosed and treated, there are no standardized methods of evaluating Hawaii students who are on a treatment plan. From an educational point of view and a medical point of view, we need to work together on the type of children we want on such a program."

Miscellany

New name for an old corporate survival method practiced by corporate underlings — the Hindlick maneuver . . . (Anonymous)

☆ ☆ ☆

Two Portuguese brothers, Charley and Manuel, tired of being broke decided to go to work . . . At the end of the day, they had earned three whole dollars . . . They debated how to spend their fortune and couldn't decide, so Charley went shopping. He returned jubilant with a box of tampons . . . "What are we supposed to do with that?" asked Manuel . . . "Look at the box," elucidated Charley. "It says we can go swimming, sailing and horseback riding with it." (An Alan Luning kind of joke . . .)

Sportsmen

Annual Accupath Golf Tournament . . . Ninety-six eager golfers gathered on a blustery Thursday afternoon in March at the Hawaii Kai Course. Tom Kobara and Barry Hopkins had arranged a spam-musubi lunch and a refreshment cart providing beer and Coke on the course . . . When the dust had finally settled and the scores turned in, Sorrell Waxman, who plays once a year, was the happy winner of a color TV set. In 2nd place was Ron Kurihara and in 3rd Bob Oishi. Our perennial winner, Bill Dang, was 4th and another regular winner, Tad Iwanuma, was 5th. Tied at 6th place with net 69s were Elbert Tomai, Ray Wong, S.K. Liao and H. Yokoyama . . . Closest to the pin winners were C.M. Lum on No. 5 Hole and George Shimamura on No. 10 . . . Ladies low net winners were Lisa Nakamura with net 73 and Ding Mercado, Alice Inouye and Noriko Fujii tied with net 74s . . . The prizes included putters, golf towel bags, shoe bags, radios, watches, umbrellas, Walkman radios, cassette players, telephones and Craig's Bakery pies . . . If you didn't win a golf prize, then you could still win door prizes, which included, balls, putters, tape recorders, radios, etc, etc. It was the best deal in town, for the entry fee of $25 also included cart and green fees, a sumptuous American Chinese buffet supper and two bar drinks . . .

Annual KMP Golf Tournament . . . Nine foursomes assembled at Leilehua GC on Wednesday afternoon, April 26 . . . A heavy drizzle made the first few holes treacherous and was the downfall for some, but then when the scores were tallied, traditional Leilehua winner Frank Fukunaga was 1st with a net 66 and Glenn Kokame with his Yonex Boroflex driver was 2nd with net 69. Tied at 3rd with net 70s were Owen Kaneshiro and H. Yokoyama. Tied at 4th were the trio of James Nakamura, Nathan Fujita and Wayne Nadamoto. We must note that Gil Yamamoto (who took up the game only several years ago) could have been this year's winner if Kuakini VP Hank Masuda had only corrected the tail-end hook on Gil's 300-yard drives before he got into trouble. Another promising gorilla with booming drives is Danny Nakayama whose only problem is getting out of sand traps . . . Both Danny and Jim Oda (who also had an off day) were happy to receive putters donated by Frank Fukunaga for high gross scores . . . David Sakuda with characteristic generosity donated enough golf balls that every participant received at least two sleeves and went home happy . . . We also have Hank Masuda to thank for his great golf tips e.g., "Hit the ball on the ass" and "Tee the ball higher . . ." Last year's winner, Don Maruyama, chaired this year's fun tournament . . .

Physicians Speak Up

John W. Pearson, president of Hawaii Federation of Physicians and Dentists, described in a March 13 letter to the editor how the Legislature is acting as a "de facto" medical school:

"Each year more non-physicians seek to do by legislative decree what they chose not to do by academic degree; i.e. expand their scope of practice at the expense of the public . . . It is the cruelest form of 'caveat emptor' (let the buyer beware) — patient care is being sacrificed on the altar of free enterprise.

"In the past year, the Legislature seriously entertained the idea of allowing naturopaths the right to do surgery and prescribe drugs . . .

"The psychologists have now become 'physicians' with a stroke of the legislative pen and can be the primary 'doctor' for worker's compensation cases, determining what X-rays you'll get or what other doctors you'll see . . .

"Other examples abound: Optometrists won the right to put drugs in your eyes; podiatrists want to perform surgery on the leg (they've already got the foot).

"Free enterprise should allow anyone to go to whomever they please for health care. This should not be in dispute. But the Legislature should not endorse, by licensure, unqualified health-care givers and imply they have the

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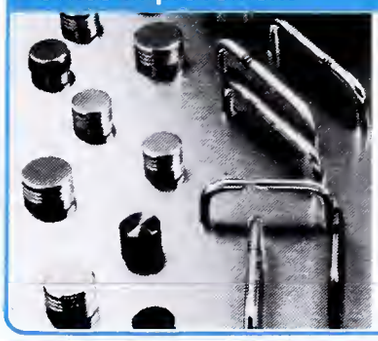
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When Ronald Oldenburg, attorney for Ferdinand and Imelda Marcos, was quoted saying "The Marcos' aides would be ostracized and 'treated like they have leprosy' if they return to the Philippines," Richard Frankel, Branch Chief of Hansen's Disease Community Program got his dander up . . . "Such a statement does great disservice to all those individuals in Hawaii, the Philippines and every other place that has had the misfortune to suffer from Hansen's Disease, the current term for leprosy . . ." "Mr. Oldenburg implies that those who have leprosy are ostracized . . . Unfortunately there are instances of overt or subtle discrimination even here in Hawaii, but most individuals with Hansen's Disease live perfectly normal lives . . . If they do experience any ostracism, it is not because of anything they have done, but because of the ignorance of those who choose to discriminate against them. . . . His statement is unwise, unfair and ill-informed."

Professional Moves

FP Thomas Bowhay joined the Hamakua Medical Center as a staff member in 1986 and has now been promoted to medical director . . .

Don Wilcox, medical director at Pali Momi Medical Center was the only physician at a 50-bed hospital in the Sudan for 40,000 refugees. Before that, he set up a clinic and community health program for victims of famine and civil war in Ethiopia . . . (Don Chapman, April 12)

Entrepreneurs

Radiologist Richard De Journett has opened the Woman's Diagnostic Imaging Center in the Queens POB. The center is designed exclusively for women and their concerns about breast cancer and osteoporosis. The parent company is Koolau Radiology Inc. . .

☆ ☆ ☆

A group called LAFS (Life After Fatigue Syndrome) calls the Chronic Fatigue Syndrome "Yuppie flu" and attributes the syndrome to the Epstein-Barr virus. LAFS meets at 1350 Ala Moana and participants share positive support and information on resources, nutrition and energizing techniques . . .

Honored, Elected & Appointed

GP-psychiatrist John McClure was presented the West Hawaii Medical Society's 1988 Distinguished Service Award for serving as volunteer medical director of Hospice of Kona. John has a full-time practice in the Keauhou Shopping Village and is on the staff of Kona Hospital, where he gives psychiatric consultation for emergency-care patients . . .

The American Board of Family Practice announced that Hilo physician Ernest L. Bade has passed his board certification in geriatric medicine.

Conference Notes

Visiting Professor Eric Gerschwin from UC Davis lectured at Mabel Smyth on March 10 . . . Rheumatoid Arthritis is a systemic chronic inflammatory disease . . . Mainly affects synovial joints . . . Has variable expression . . . Prevalence about 3% of population . . . Has worldwide distribution . . . Sex ratio of 3 women to 1 man . . . Peak age of onset: 25 to 50 years . . . Inherited disease . . . Is RA a disease of modern man? No hard evidence that RA occurred before 1500 . . .

Symptoms of RA: morning stiffness; joint tenderness or pain on motion; Non-specific constitutional symptoms: fatigue, anorexia, weight loss, weakness, fever . . . Affects peripheral joints symmetrically more than central joints . . . 75% of patients have multiple joints involved and only 25% have a single joint involved, half of them with knee sy's . . . 60% have small joint involvement . . . Sparing the distal IP joints is unique to RA . . .

Lab Features:
1. RF (rheumatoid factor)
2. Hypergammaglobulinemia
3. Anemia
4. Acute Phase Reactants:
 a. C-Reactive Protein
 b. ESR . . .

RF in other disease:
1. RA
2. Sjorgen's syndrome
3. SLE
4. Hyperglobuminemia
5. Chronic infections, e.g. syphilis, tuberculosis, leprosy, SBE
6. Viral Infections . . .

Clinical Course: 40 to 60% have a single episode and a long remission; the rest have recurrent flares or chronic inflammation . . . Systemic extraarticular manifestations: a. Felty's nodules, b. Vasculitis (Ask for ecclesiastical consult) . . . RA nodules appear in patients with RF positive and in those prone to rheumatoid vasculitis . . .

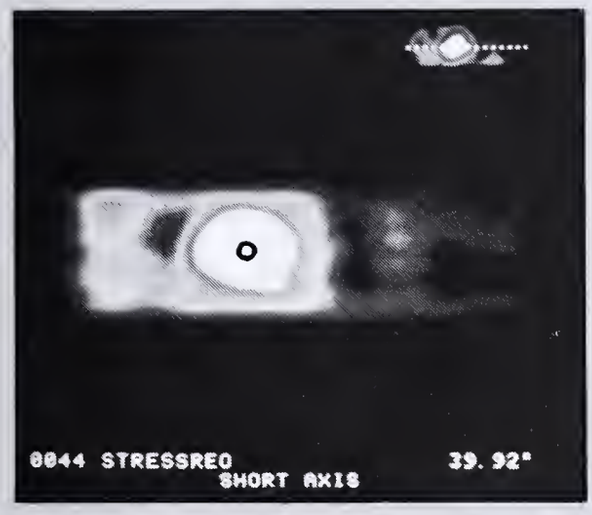
Drug Therapy: a. ASA, b. NSAID, c. Au salts, d. Cytotoxics

Re NSAID's: Motrin 800 mg qid equivalent to any of the other NSAID's . . . All NSAID's affect the kidney, but Clinoril (at low doses eg 150mg bid) and Feldene will spare the kidney . . . Voltaren can be hepatotoxic . . .

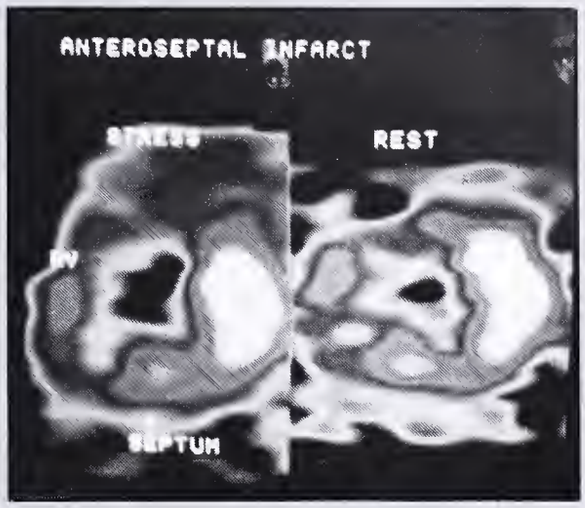
NSAID classification: 1. Proprionics; 2. Indoles; 3. Piroxicans; 4. Salicylates . . . If one class of NSAIDs doesn't work, use another class . . . If no response to NSAIDs, try Gold therapy; if still no response, try C-Penicillamine or Imuran . . . Steroids are for symptomatic relief . . . Plasmaphoresis is a new modality with questionable efficacy . . . ■

Nuclear Medicine Teaching File

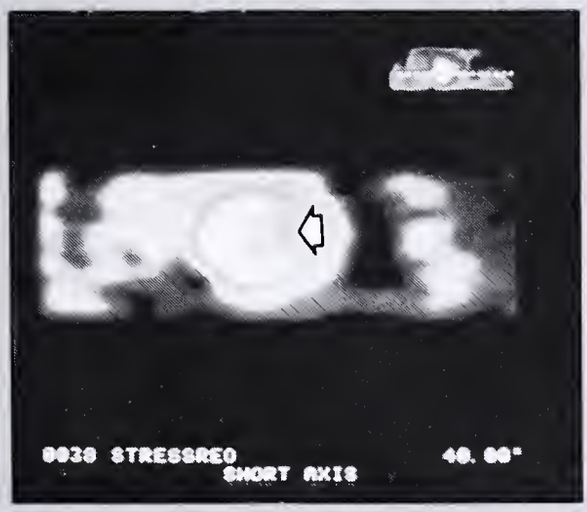
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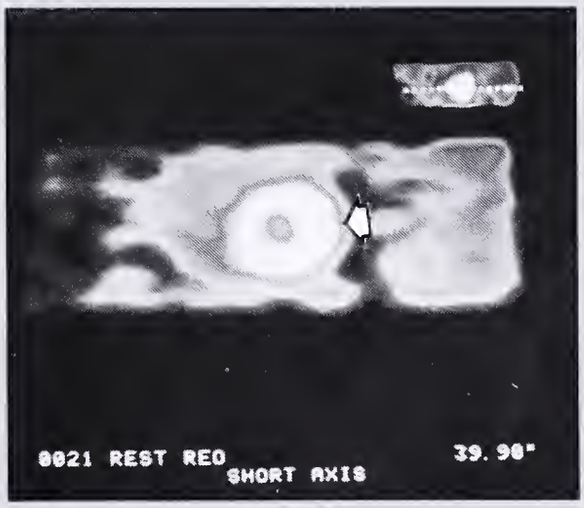
1. Normal Myocardial Perfusion
(Note complete doughnut appearance.)



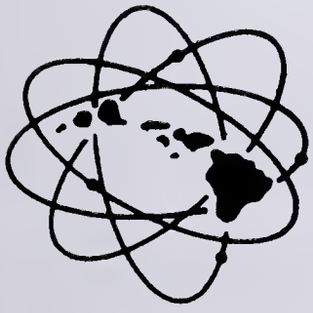
2. Anteroseptal Infarct
(Note loss of complete doughnut appearance both after stress and rest.)



3. Lateral Wall Ischemia - Stress
(Note loss of lateral wall blood flow.)



4. Lateral Wall Ischemia - Rest
(Note normal appearing lateral wall after rest.)



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- When is joint ownership a ticking time bomb?
- What are the 3 best ways to avoid probate and which is best?
- Which trust gives the best protection?

Seminar Registration

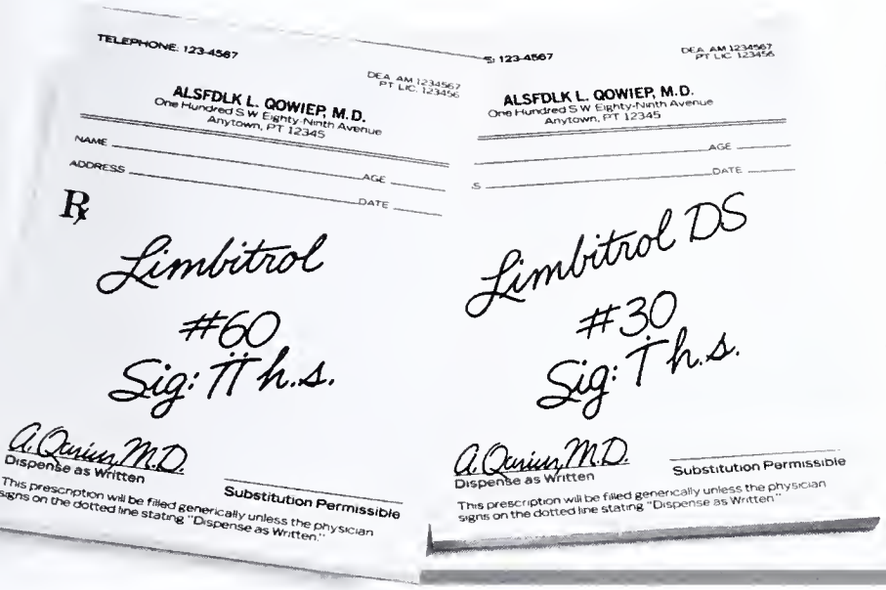
Cost: $49, pre-registered ($100 at the door)
How: Call toll-free 1-800-654-6606

Date and Location

When: Tuesday, August 15, 1989
7:00-10:00 pm
Where: Hawaiian Regent
2552 Kalalaua Ave
Honolulu, HI, 96815-3699

In moderate depression and anxiety

- 74% of patients experienced improved sleep after the first *h.s.* dose[1]
- First-week improvement in somatic symptoms[1]
- 50% greater improvement with Limbitrol in the first week than with amitriptyline alone[2]



Protect Your Prescribing Decision: Specify "Do not substitute."

Limbitrol®

Each tablet contains 5 mg chlordiazepoxide and 12.5 mg amitriptyline (as the hydrochloride salt) Ⓒ IV

Limbitrol® DS

Each tablet contains 10 mg chlordiazepoxide and 25 mg amitriptyline (as the hydrochloride salt) Ⓒ IV

References: 1. Data on file, Hoffmann-La Roche Inc., Nutley, NJ. 2. Feighner JP, *et al: Psychopharmacology 61*:217-225, Mar 22, 1979.

Limbitrol® Ⓒ IV
Tranquilizer—Antidepressant
Before prescribing, please consult complete product information, a summary of which follows:

Contraindications: Known hypersensitivity to benzodiazepines or tricyclic antidepressants; concomitant use with MAOIs or within 14 days of monoamine oxidase inhibitors (then initiate cautiously, gradually increasing dosage until optimal response is achieved); during acute recovery phase following myocardial infarction.

Warnings: Use with caution in patients with history of urinary retention or angle-closure glaucoma. Severe constipation may occur when used with anticholinergics. Closely supervise cardiovascular patients. Arrhythmias, sinus tachycardia, prolongation of conduction time, myocardial infarction and stroke reported with tricyclic antidepressants, especially in high doses. Caution patients about possible combined effects with alcohol and other CNS depressants and against hazardous occupations requiring complete mental alertness (*e.g.*, operating machinery, driving).

***Usage in Pregnancy:* Use of minor tranquilizers during the first trimester should almost always be avoided because of increased risk of congenital malformations. Consider possibility of pregnancy when instituting therapy.**

Withdrawal symptoms of the barbiturate type have occurred after discontinuation of benzodiazepines (see Drug Abuse and Dependence).

Precautions: Use cautiously in patients with a history of seizures, in hyperthyroid patients, those on thyroid medication, patients with impaired renal or hepatic function. Because of suicidal ideation in depressed patients, do not permit easy access to large quantities of drug. Periodic liver function tests and blood counts recommended during prolonged treatment. Amitriptyline may block action of guanethidine or similar antihypertensives. When tricyclic antidepressants are used concomitantly with cimetidine (Tagamet), clinically significant effects have been reported involving delayed elimination and increasing steady-state concentrations of the tricyclic drugs. Use of Limbitrol with other psychotropic drugs has not been evaluated; sedative effects may be additive. Discontinue several days before surgery. Limit concomitant administration of ECT to essential treatment. See Warnings for precautions about pregnancy. Should not be taken during the nursing period or by children under 12. In elderly and debilitated, limit to smallest effective dosage to preclude ataxia, oversedation, confusion or anticholinergic effects. Inform patients to consult physician before increasing dose or abruptly discontinuing this drug.

Adverse Reactions: Most frequent: drowsiness, dry mouth, constipation, blurred vision, dizziness, bloating. Less frequent: vivid dreams, impotence, tremor, confusion, nasal congestion. Rare: granulocytopenia, jaundice, hepatic dysfunction. Others: many symptoms associated with depression including anorexia, fatigue, weakness, restlessness, lethargy.

Adverse reactions not reported with Limbitrol but reported with one or both components or closely related drugs: *Cardiovascular:* Hypotension, hypertension, tachycardia, palpitations, myocardial infarction, arrhythmias, heart block, stroke. *Psychiatric:* Euphoria, apprehension, poor concentration, delusions, hallucinations, hypomania, increased or decreased libido. *Neurologic:* Incoordination, ataxia, numbness, tingling and paresthesias of the extremities, extrapyramidal symptoms, syncope, changes in EEG patterns. *Anticholinergic:* Disturbance of accommodation, paralytic ileus, urinary retention, dilatation of urinary tract. *Allergic:* Skin rash, urticaria, photosensitization, edema of face and tongue, pruritus. *Hematologic:* Bone marrow depression including agranulocytosis, eosinophilia, purpura, thrombocytopenia. *Gastrointestinal:* Nausea, epigastric distress, vomiting, anorexia, stomatitis, peculiar taste, diarrhea, black tongue. *Endocrine:* Testicular swelling, gynecomastia in the male, breast enlargement, galactorrhea and minor menstrual irregularities in the female, elevation and lowering of blood sugar levels, and syndrome of inappropriate ADH (antidiuretic hormone) secretion. *Other:* Headache, weight gain or loss, increased perspiration, urinary frequency, mydriasis, jaundice, alopecia, parotid swelling.

Drug Abuse and Dependence: Withdrawal symptoms similar to those noted with barbiturates and alcohol have occurred following abrupt discontinuance of chlordiazepoxide; more severe seen after excessive doses over extended periods; milder after taking continuously at therapeutic levels for several months. Withdrawal symptoms also reported with abrupt amitriptyline discontinuation. Therefore, after extended therapy, avoid abrupt discontinuation and taper dosage. Carefully supervise addiction-prone individuals because of predisposition to habituation and dependence.

Overdosage: Immediately hospitalize patient. Treat symptomatically and supportively. I.V. administration of 1 to 3 mg physostigmine salicylate may reverse symptoms of amitriptyline poisoning. See complete product information for manifestation and treatment.

How Supplied: *Double strength (DS) Tablets,* white, film-coated, each containing 10 mg chlordiazepoxide and 25 mg amitriptyline (as the hydrochloride salt), and *Tablets,* blue, film-coated, each containing 5 mg chlordiazepoxide and 12.5 mg amitriptyline (as the hydrochloride salt)—bottles of 100 and 500; Tel-E-Dose® packages of 100; Prescription Paks of 50.

ROCHE **Roche Products**

Roche Products Inc
Manati, Puerto Rico 00701

PI 0288

In the depressed and anxious patient

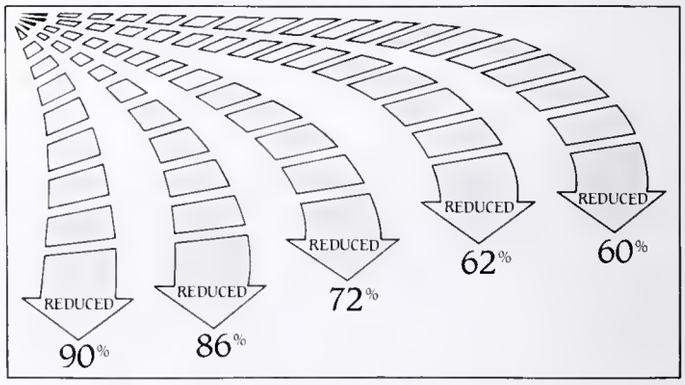
See Improvement In The First Week...[1]

And The Weeks That Follow

- 74% of patients experienced improved sleep after the first *h.s.* dose[1]
- First-week reduction in somatic symptoms[1]

Caution patients about the combined effects of Limbitrol with alcohol or other CNS depressants and about activities requiring complete mental alertness, such as operating machinery or driving a car. In general, limit dosage to the lowest effective amount in elderly patients.

Percentage of Reduction in Individual Somatic Symptoms During First Week of Limbitrol Therapy*



*Patients often presented with more than one somatic symptom.

Limbitrol®

Each tablet contains 5 mg chlordiazepoxide and 12.5 mg amitriptyline (as the hydrochloride salt) Ⓒ Ⓘ Ⓥ

Limbitrol® DS

Each tablet contains 10 mg chlordiazepoxide and 25 mg amitriptyline (as the hydrochloride salt) Ⓒ Ⓘ Ⓥ

ROCHE **Roche Products**

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Please see summary of product information inside back cover.





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Hit or miss.

When it's left to blind luck, you take your chances if your banker doesn't have the kind of clout and experience to expedite your business deals.

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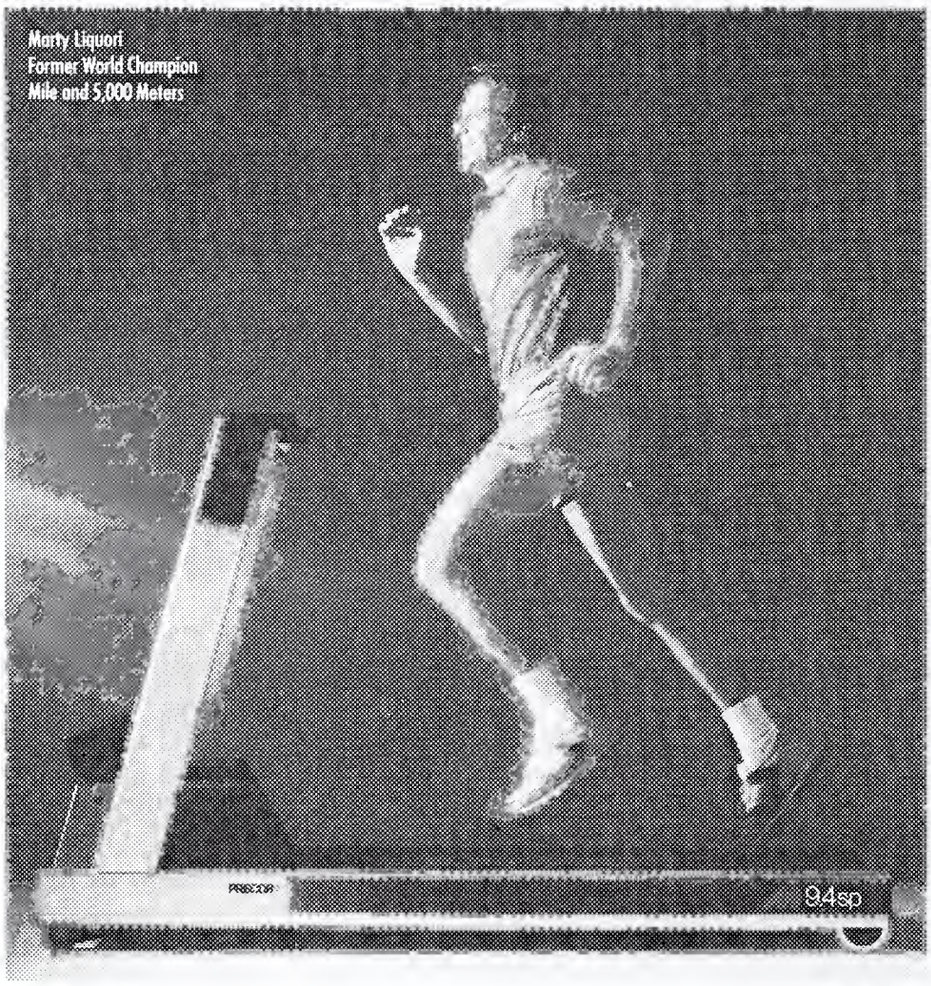
They're also getting one of Hawaii's most extensive offerings of services geared toward local businesses. From innovative financing techniques to advanced cash management products to specialized industry expertise.

See what a strong banking network can do for your profit picture. Call First Interstate at 525-6820 today.

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Just as soon as he's born.

The same baby who, ten years ago, wouldn't have lived to speak his first word. But now doctors can look inside the hearts of unborn babies, detect disorders and correct them at birth. Thanks to research, he can have a healthy, normal life.

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Gout

Study and research by members of our community deserve recognition by exposure within the print media accessible to readers.

In this regard, the extensive work of Francis Ikezaki, MD, 30 years in practice in Hawaii as an internist with a particular interest in the arthritides, in reviewing the history of gout, we consider to be worthy of publication in this issue.

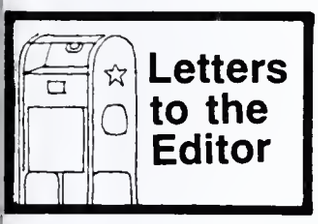
Gout is an ancient and honorable disease. It was known to the ancient Egyptians and Greeks. Podagra, the term used by Hippocrates, is the Greek word for the excruciatingly painful, swollen, reddened big toe joint, ankle or foot of gout. Podagra means "foot caught in a trap." Every Western child has grown up with the indelible image of the old Earl of Dorincourt in the story of *Little Lord Fauntleroy,* lounging in his regal chair, his bandaged foot elevated on a footstool, a large cane in his hand ready to ward off those who might come too close, the mastiff slumbering alongside also with the intent of warning visitors not to come close enough to touch the sensitive limb.

How many extant practitioners of the art of medicine remember our armamentarium available for the instant relief of the miserable wretch coming into the office on crutches, or between two sympathetic friends, the huge ampoule of Sodium salicylate and Iodide with Colchicine to be given slowly i.v.?

Francis' review of gout brings out the reminder to all of us that what may be a wonder drug today may turn out to be not so wondrous tomorrow; that the progress of the art of medicine over the past 2,000 years was fraught with diversions, pitfalls and morasses of misconceptions, illogical ignorance and pig-headed insistence by pundits that their interpretations of phenomena were incontrovertible.

We wonder, after reading Ikezaki's treatise: Is it indeed so, that all the arthritides have in common an autoimmune etiology triggered by the uric acid crystal, the breakdown product of cell nuclei? In that case, "gout" is with us to stay.

J.I. Frederick Reppun, MD
Editor



I read with interest both the letter to the editor by Barry Blum and the editor's reply in the April HMJ. It seems to me that they both miss the point while having their motivations in the right place.

I couldn't agree more with Dr. Blum's comment about the paternalistic plantation mentality which is indigenous to our State, medical practice included. A few years ago a local political pundit remarked that John Burns had taken the State of Hawaii from the plantation era into the modern era. In actuality what he did was to turn the entire state into a giant plantation.

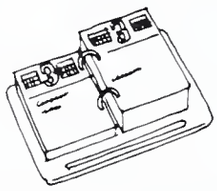
Despite all our whining and moaning, physicians remain privileged folk. We have interesting jobs and make good livings (orthopaedists considerably better then psychiatrists, I might add), facts that are not at all lost on the citizenry who request our services. If we want things to change, I suspect we are able, within limits, but the answer is certainly not by brute force. The 1930s union approach suggested by Dr. Blum has been outdated since 1960 and is no longer a real factor in the modern business world, much less medicine. Further, if one wants an example of what old-fashioned unionism does in the professions, all he has to do is look at the state of public education and the recent unionism of teachers. Finding the biggest bully on the block probably won't work anywhere, and it sure as hell will do nothing in Hawaii but create enormous, but "quiet and effective," public backlash.

For over nine years I was a non-participant with HMSA. It worked beautifully. The only reason I changed was that my new partners wanted it otherwise. They said it was "more convenient." That it is, but we have relinquished a basic freedom. Physicians seem to want it both ways. Whenever I mention to my colleagues that non-participation is the single most potent option they have to resolve their complaints, they stammer and regard me with glassy eyes. Initially, they suggest that psychiatrists couldn't do it because they have inherently unreliable patients. When I say it worked well, they say it's because we have a more personal relationship with our patients. When I asked HMA representatives about this issue, they reply that they have always favored a strict indemnity approach (right on!) but are afraid to pursue it politically and economically.

When Dr. Reppun replies that "it is in the genes of the profession to remain free . . .," he apparently excludes HMSA.

Beyond the above issue I would suggest that we have overlooked a host of public relations opportunities. The public has no idea, for instance, of the personal and

(Continued on page 260)



Continuing Medical Education

CALENDAR OF ACCREDITED EVENTS—CATEGORY 1

Accredited Programs of CME allow one unit of AMA credit for each hour of instruction excluding all "breaks." Some programs also are accredited for AAFP prescribed credit.

LOCAL ACCREDITED PROGRAMS
ONGOING

For a complete list of ongoing programs, please refer to the April 1989 edition of the HAWAII MEDICAL JOURNAL. Further information is available through the individual institutions or through the HMA's CME Department.

SPECIAL EVENTS

All special events should be confirmed with the CME program sponsors as cancellations are not necessarily reported to the HAWAII MEDICAL JOURNAL.

JULY

7/29-8/5

Update in Urosynecology. Contact: Director MMC-UCI Center for Health Education, 2801 Atlantic Ave. (P.O. Box 1428), Long Beach, CA 90801-1428. Location: Seven-day cruise of the Hawaiian Islands.

7/31-8/3

AIDS Update: Role & Responsibility of Health Care Professional. Contact: Children's Hospital of Oakland, 415-540-8686. Location: Hyatt Regency Waikoloa, Big Island.

AUGUST

8/13-8/18

Hawaiian Seminar on Clinical Anesthesia. Contact: CSA, 1065 E. Hillsdale Blvd., Ste. 410, Foster City 94404, 415-345-3020. Location: Sheraton Kauai Hotel, Kauai.

8/13-8/23

USC 32nd Annual Postgraduate Refresher Course. Contact: USC, School of Medicine, Postgraduate Division, 1975 Zonal Ave., Los Angeles, CA 90033, 800-421-6729; within CA 800-321-1929. Location: Westin Maui, Maui and Hyatt Waikoloa, Big Island.

8/20-8/23

Third International Symposium on Lipofuscin and Ceroid Pigments - 1989: State of the Art. Contact: E.A. Porta, MD, Department of Pathology, School of Medicine, University of Hawaii, 1960 East-West Rd., Honolulu, HI 96822. Location: Stouffer Wailea Beach Resort, Maui.

SEPTEMBER

9/30-10/4

International Conference on Bioenergetic Medicine - Past, Present and Future. Contact: Continuing Medical Education, John A. Burns School of Medicine, University of Hawaii, 1960 East-West Rd., Honolulu, HI 96822, 808-948-6949. Location: East-West Center, Honolulu, HI.

OCTOBER

10/14-10/21

New Approaches to the Evaluation of Neoplastic Lymphoproliferative Disorders, USC School of Medicine University Pathology Associates. Contact: University Pathology Associates, Inc., Department of Pathology, USC School of Medicine, 2025 Zonal Ave., Los Angeles, CA 90033. Location: Wailea Beach Resort, Maui.

10/14-10/21

Fourteenth Annual International Body Imaging Conference. Contact: Body Imaging Conference, 9800-D Topanga Canyon Blvd., Suite 232, Chatsworth, CA 91311, 818-700-9821. Location: Hyatt Regency Waikoloa, Big Island.

10/31-11/3

Therapeutic Hotline. Contact: Paul H. Jacobs, MD, Dept. of Dermatology, Rm. R-144, Stanford, CA 94305, 415-723-7854. Location: Molokai.

NOVEMBER

11/2-11/7

The ACP-UH MKSAP VIII Review Course. Contact: Irwin J. Schatz, MD, Professor & Chairman, Department of Medicine, John A. Burns School of Medicine, 1960 East-West Rd., Honolulu, HI 96822, 808-548-2810. Location: Stouffer Wailea, Maui. Maui.

11/07-11/14

Annual Clinical Meeting, District I, The American College of OB-GYN, Contact: Colpitts Medical Meeting Planners, 450 Providence Hwy., Dedham/Boston, MA 02026-6868, 1-800-972-7777; 617-326-7800. Location: Maui and Kauai.

11/10-11/12

Hawaii Section ACOG Annual Educational Meeting. Contact: Robyn Izumi, 1319 Punahou St., #816, Honolulu, HI 96826, 808-948-6949. Location: Stouffer Waiohai Beach Resort, Kauai.

11/10-11/12

133rd Hawaii Medical Association Annual Scientific Meeting. Contact: Jennie Asato, 1360 S. Beretania St., Honolulu, HI 96814, 808-536-7702. Location: Westin Maui.

The Hawaii Medical Association does not review or evaluate the programs listed in the Hawaii Medical Journal Continuing Medical Education column and assumes no responsibility for educational value, scientific content, changes in agenda or cancellations.

LETTERS TO THE EDITOR

(Continued from page 259)

economic sacrifices we make in caring for Medicare and Medicaid patients. Rather than publicly bitching about our administrative inconvenience and low fees in these areas, we should be educating the citizenry about our professionalism. The public also has no idea of the uncompensated time we put in on hospital staffs to make things safer and better for them. They have no idea what a struggle it is to try to fight the legal system while we attempt to police our profession against bad doctors.

We, in fact, have little realistic choice in some areas but a multitude of very potent choices in many others which we seem to ignore. The problem seems to be that nothing is free and we can't have it both ways.

Jon Betwee, MD
Maui Psychiatric Group

AXID®

nizatidine

Enhances compliance and convenience

Patients appreciate Axid, 300 mg, in the Convenience Pak

In a Convenience Pak survey (N = 100)[1]

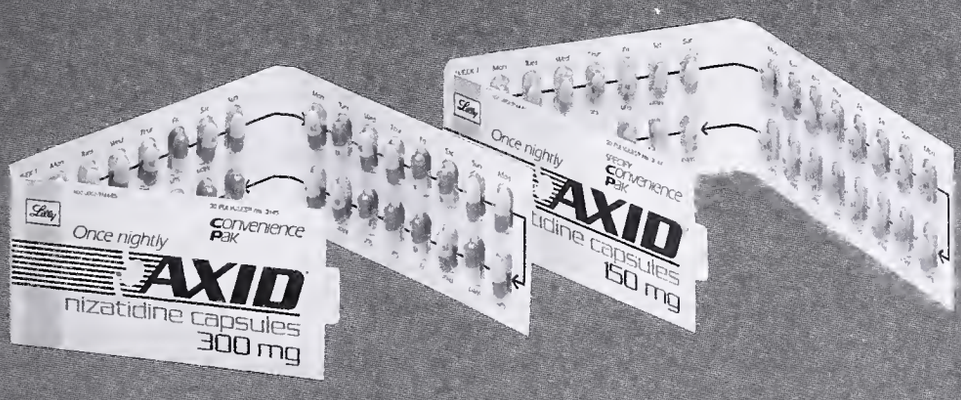
- *100% said the directions on the Convenience Pak were clear and easy to understand*
- *93% reported not missing any doses*

Pharmacists save time – at no extra cost

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The Convenience Pak promotes patient counseling

- *Pharmacists dispensing the Axid Convenience Pak can encourage compliance and continued customer satisfaction*



Convenience Pak is available at no extra cost

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1. Data on file, Lilly Research Laboratories.

NC-2907 **-42310 ELI LILLY AND COMPANY

AXID®

nizatidine capsules

Brief Summary

Consult the package literature for complete information.

Indications and Usage Axid is indicated for up to eight weeks for the treatment of active duodenal ulcer In most patients, the ulcer will heal within four weeks

Axid is indicated for maintenance therapy for duodenal ulcer patients at a reduced dosage of 150 mg h.s after healing of an active duodenal ulcer The consequences of continuous therapy with Axid for longer than one year are not known.

Contraindication: Axid is contraindicated in patients with known hypersensitivity to the drug and should be used with caution in patients with hypersensitivity to other H_2-receptor antagonists

Precautions: *General* — 1. Symptomatic response to nizatidine therapy does not preclude the presence of gastric malignancy

2. Because nizatidine is excreted primarily by the kidney, dosage should be reduced in patients with moderate to severe renal insufficiency

3. Pharmacokinetic studies in patients with hepatorenal syndrome have not been done. Part of the dose of nizatidine is metabolized in the liver In patients with normal renal function and uncomplicated hepatic dysfunction, the disposition of nizatidine is similar to that in normal subjects

Laboratory Tests — False-positive tests for urobilinogen with Multistix® may occur during therapy with nizatidine

Drug Interactions — No interactions have been observed between Axid and theophylline, chlordiazepoxide, lorazepam, lidocaine, phenytoin, and warfarin. Axid does not inhibit the cytochrome P-450-linked drug-metabolizing enzyme system; therefore, drug interactions mediated by inhibition of hepatic metabolism are not expected to occur In patients given very high doses (3,900 mg) of aspirin daily, increases in serum salicylate levels were seen when nizatidine, 150 mg b.i.d., was administered concurrently.

Carcinogenesis, Mutagenesis, Impairment of Fertility — A two-year oral carcinogenicity study in rats with doses as high as 500 mg/kg/day (about 80 times the recommended daily therapeutic dose) showed no evidence of a carcinogenic effect. There was a dose-related increase in the density of enterochromaffin-like (ECL) cells in the gastric oxyntic mucosa In a two-year study in mice, there was no evidence of a carcinogenic effect in male mice, although hyperplastic nodules of the liver were increased in the high-dose males as compared with placebo Female mice given the high dose of Axid (2,000 mg/kg/day, about 330 times the human dose) showed marginally statistically significant increases in hepatic carcinoma and hepatic nodular hyperplasia with no numerical increase seen in any of the other dose groups. The rate of hepatic carcinoma in the high-dose animals was within the historical control limits seen for the strain of mice used. The female mice were given a dose larger than the maximum tolerated dose, as indicated by excessive (30%) weight decrement as compared with concurrent controls and evidence of mild liver injury (transaminase elevations). The occurrence of a marginal finding at high dose only in animals given an excessive and somewhat hepatotoxic dose, with no evidence of a carcinogenic effect in rats, male mice, and female mice (given up to 360 mg/kg/day, about 60 times the human dose), and a negative mutagenicity battery are not considered evidence of a carcinogenic potential for Axid

Axid was not mutagenic in a battery of tests performed to evaluate its potential genetic toxicity, including bacterial mutation tests, unscheduled DNA synthesis, sister chromatid exchange, mouse lymphoma assay, chromosome aberration tests, and a micronucleus test.

In a two-generation, perinatal and postnatal fertility study in rats, doses of nizatidine up to 650 mg/kg/day produced no adverse effects on the reproductive performance of parental animals or their progeny

Pregnancy — Teratogenic Effects — Pregnancy Category C — Oral reproduction studies in rats at doses up to 300 times the human dose and in Dutch Belted rabbits at doses up to 55 times the human dose revealed no evidence of impaired fertility or teratogenic effect, but, at a dose equivalent to 300 times the human dose, treated rabbits had abortions, decreased number of live fetuses, and depressed fetal weights. On intravenous administration to pregnant New Zealand White rabbits, nizatidine at 20 mg/kg produced cardiac enlargement, coarctation of the aortic arch, and cutaneous edema in one fetus and at 50 mg/kg it produced ventricular anomaly, distended abdomen, spina bifida, hydrocephaly, and enlarged heart in one fetus. There are, however, no adequate and well-controlled studies in pregnant women. It is also not known whether nizatidine can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Nizatidine should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers — Studies conducted in lactating women have shown that <0.1% of the administered oral dose of nizatidine is secreted in human milk in proportion to plasma concentrations Caution should be exercised when administering nizatidine to a nursing mother.

Pediatric Use — Safety and effectiveness in children have not been established

Use in Elderly Patients — Ulcer healing rates in elderly patients are similar to those in younger age groups. The incidence rates of adverse events and laboratory test abnormalities are also similar to those seen in other age groups. Age alone may not be an important factor in the disposition of nizatidine. Elderly patients may have reduced renal function.

Adverse Reactions: Clinical trials of nizatidine included almost 5,000 patients given nizatidine in studies of varying durations Domestic placebo-controlled trials included over 1,900 patients given nizatidine and over 1,300 given placebo Among reported adverse events in the domestic placebo-controlled trials, sweating (1% vs 0.2%), urticaria (0.5% vs < 0.01%), and somnolence (2.4% vs 1.3%) were significantly more common in the nizatidine group A variety of less common events was also reported, it was not possible to determine whether these were caused by nizatidine

Hepatic — Hepatocellular injury, evidenced by elevated liver enzyme tests (SGOT [AST], SGPT [ALT], or alkaline phosphatase), occurred in some patients and was possibly or probably related to nizatidine In some cases, there was marked elevation of SGOT, SGPT enzymes (greater than 500 IU/L) and, in a single instance, SGPT was greater than 2,000 IU/L. The overall rate of occurrences of elevated liver enzymes and elevations to three times the upper limit of normal, however, did not significantly differ from the rate of liver enzyme abnormalities in placebo-treated patients. All abnormalities were reversible after discontinuation of Axid

Cardiovascular — In clinical pharmacology studies, short episodes of asymptomatic ventricular tachycardia occurred in two individuals administered Axid and in three untreated subjects.

CNS — Rare cases of reversible mental confusion have been reported.

Endocrine — Clinical pharmacology studies and controlled clinical trials showed no evidence of antiandrogenic activity due to Axid Impotence and decreased libido were reported with equal frequency by patients who received Axid and by those given placebo. Rare reports of gynecomastia occurred

Hematologic — Fatal thrombocytopenia was reported in a patient who was treated with Axid and another H_2-receptor antagonist. On previous occasions, this patient had experienced thrombocytopenia while taking other drugs. Rare cases of thrombocytopenic purpura have been reported

Integumental — Sweating and urticaria were reported significantly more frequently in nizatidine- than in placebo-treated patients Rash and exfoliative dermatitis were also reported.

Hypersensitivity — As with other H_2-receptor antagonists, rare cases of anaphylaxis following administration of nizatidine have been reported. Because cross-sensitivity in this class of compounds has been observed, H_2-receptor antagonists should not be administered to individuals with a history of previous hypersensitivity to these agents Rare episodes of hypersensitivity reactions (eg, bronchospasm, laryngeal edema, rash, and eosinophilia) have been reported

Other — Hyperuricemia unassociated with gout or nephrolithiasis was reported. Eosinophilia, fever, and nausea related to nizatidine administration have been reported

Overdosage: Overdoses of Axid have been reported rarely The following is provided to serve as a guide should such an overdose be encountered

Signs and Symptoms — There is little clinical experience with overdosage of Axid in humans. Test animals that received large doses of nizatidine have exhibited cholinergic-type effects, including lacrimation, salivation, emesis, miosis, and diarrhea. Single oral doses of 800 mg/kg in dogs and of 1,200 mg/kg in monkeys were not lethal Intravenous median lethal doses in the rat and mouse were 301 mg/kg and 232 mg/kg respectively

Treatment — To obtain up-to-date information about the treatment of overdose, a good resource is your certified regional Poison Control Center. Telephone numbers of certified poison control centers are listed in the *Physicians' Desk Reference (PDR)*. In managing overdosage, consider the possibility of multiple drug overdoses, interaction among drugs, and unusual drug kinetics in your patient.

If overdosage occurs, use ot activated charcoal, emesis, or lavage should be considered along with clinical monitoring and supportive therapy Renal dialysis for four to six hours increased plasma clearance.

PV 2096 AMP [013089]

Additional information available to the profession on request.

Automatic implantable cardioverter defibrillator: Report of the first two implants in Hawaii

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Sudden cardiac death is the major cause of death in the United States today, claiming over 400,000 victims each year, or one per minute. In the majority of cases, the underlying mechanism is malignant ventricular tachyarrhythmia, with the common substrate being abnormal myocardium from ischemic heart disease or congestive cardiomyopathy.

In the past decade, much progress has been made in the diagnosis and treatment of malignant ventricular arrhythmias as the result of the availability of newer, more potent antiarrhythmic agents and the advent of electrophysiologic testing. Unfortunately, about half of the patients with the threat of sudden death or with malignant ventricular arrhythmias that has been aborted do not respond to conventional antiarrhythmic agents. In the past, these patients have generally been placed on amiodarone, which has a higher efficacy but also a plethora of side effects, some potentially fatal. "Mapping guided ablative surgery" has a high operative mortality and less than optimal rate of success.

In the past five years, a new mode of therapy has become available: The automatic implantable cardioverter-defibrillator (AICD). This has proven to be a highly effective weapon in the attack on ventricular tachyarrhythmias and sudden death. We would like to report our experience with the first two implants in the State of Hawaii.

Case Report No. 1

HV was a 67-year-old man whose sudden death was aborted. His cardiac risk factors were notable in that he had a history of smoking and was hypertensive. He had a myocardial infarction in 1969. There was also a history of heavy alcoholic intake.

On August 15, 1987, he collapsed at home and was noted by the paramedics to have cyanosis and sustained ventricular tachycardia (VT). His condition deteriorated en route to the hospital and he was DC cardioverted back to sinus rhythm. Subsequently, cardiac catheterization revealed 2-vessel coronary artery disease with complete occlusion of the dominant right coronary artery and complete occlusion of a circumflex marginal vessel. His left ventriculogram showed inferior near-akinesis and moderate to severe anterior hypokinesis with an ejection fraction of about 25%. The findings were consistent with ischemic cardiomyopathy with possibly an alcoholic etiology.

Ten days later, he underwent electrophysiology testing. Sustained monomorphic VT was inducible with right ventricular programmed stimulation, with two extrastimuli. After intravenous procainamide (achieving a level of 9.9 mcg/ml), sustained VT was still inducible. Thus, he was deemed unresponsive to conventional drug testing.

AICD implantation was recommended to and accepted by the patient. The operation was performed on September 3, 1987, at Straub Hospital.

The patient was placed under general anesthesia. A median sternotomy approach was used and the heart was adequately exposed. The procedure was done under normothermia without cardiopulmonary bypass. The pericardium was opened. A square wire-mesh patch (10cm^2) was sewn loosely over the right atrium, and a larger (20 cm^2) patch was loosely sewn over the left ventricular apex. VT was induced intraoperatively and the threshold in Joules (J) needed to convert the VT reproducibly into sinus rhythm was determined. The orientation of the patches achieving the lowest cardioversion threshold was determined. Ventricular fibrillation (VF) was also induced and defibrillation thresholds were likewise assessed.

Depending on the output of the AICD generator (usu-

From the Departments of Medicine, Straub Clinic & Hospital and the University of Hawaii.

This article is dedicated to the memory of Mr. Howard Van De Car, the first AICD patient in Hawaii.

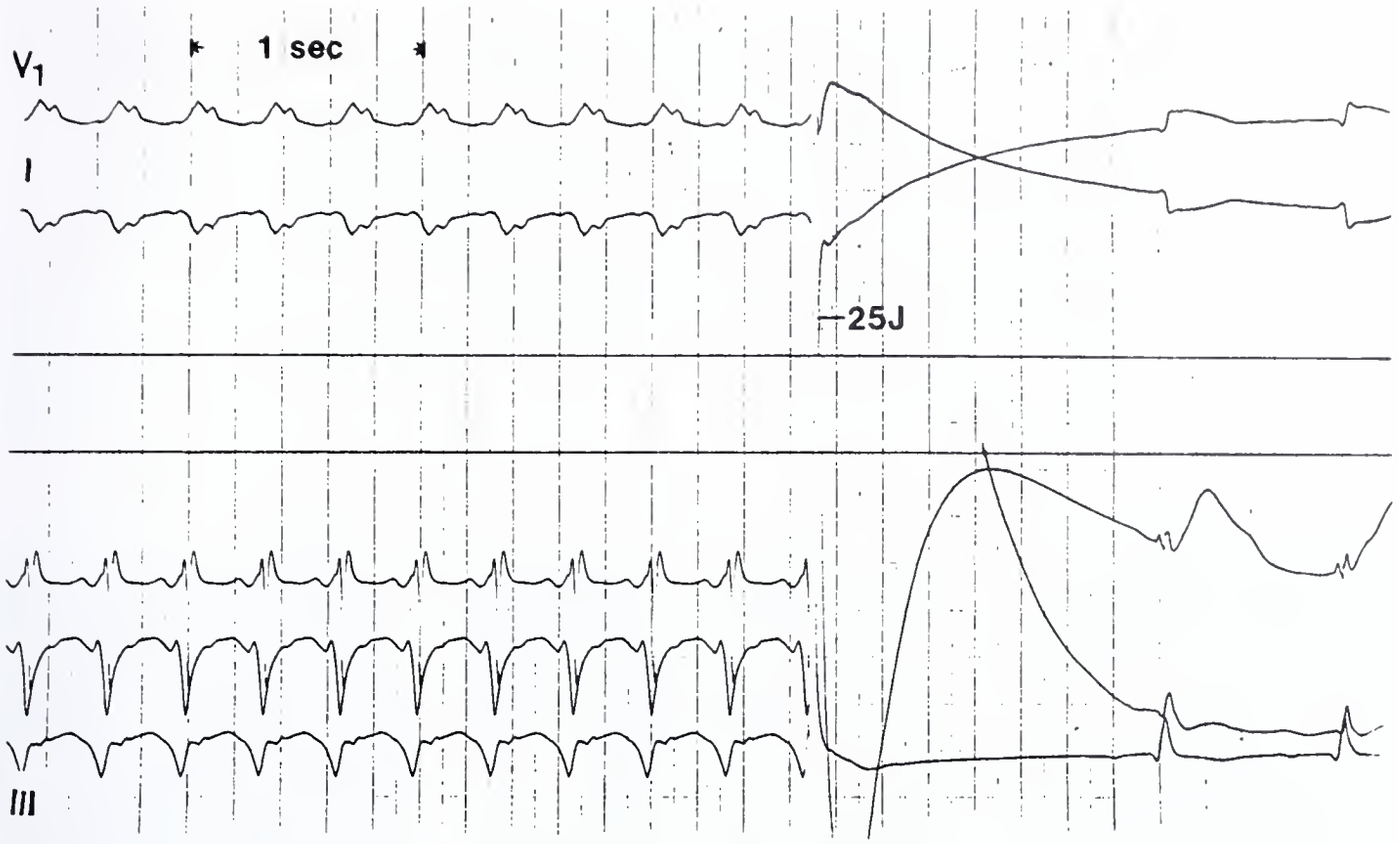


Figure 1: Sustained ventricular tachycardia converted to sinus rhythm with 1 shock of 25 Joules (J) from the AICD generator, in patient #1 (Leads VI, I and III are surface electrocardiogram leads.)

ally 25J or 30J), a margin of 10-15J between the cardioversion and defibrillation thresholds and the output of the generator was usually considered adequate. In this case, the cardioversion and defibrillation thresholds were 5 and 10J respectively and were considered excellent.

The patches were then sewn securely in place and the leads from these patches were tunneled subcutaneously to an abdominal pocket outside the rectus muscle, into which was placed the rather sizable AICD generator. VT and VF were again induced and the device successfully converted both arrhythmias with one shock (Figure 1). The sternotomy incision was closed and the procedure appeared to be well tolerated. [The generator used was a CPI Ventak Model 1520 (rate-only) unit.]

Post-implantation, the patient had recurrent VT in the hospital and was successfully cardioverted by the device with one shock each episode. His postoperative course was complicated by transient respiratory failure, which was resolved. He also developed atrial fibrillation transiently, but that was controlled by the administration of digoxin.

Two months after being discharged, he developed an induration at the caudal end of the sternotomy incision. This was followed by an extrusion of one of the leads through the skin overlying his lower sternum. The probable cause was a dehiscence of the wound. The patient was given oral and systemic antibiotics for two weeks; the exposed leads were sterilized topically with an antibiotic solution, and the wound was closed over with a transposed piece of rectus muscle. The patient then did well.

Frequent successful defibrillations (about once a month), outside of the hospital, took place. Unfortunately, he expired one year and seven months post-implantation, the result of superior mesenteric artery thrombosis and bowel infarction.

Case Report No. 2

JB was a 71-year-old man with syncope and ventricular tachycardia. He had known, insulin-dependent diabetes mellitus. He had had frequent ventricular ectopy since 1969.

On February 26, 1981, he had a syncopal episode while on the toilet seat early in the morning. A subsequent echocardiogram revealed congestive cardiomyopathy with ejection fraction of 35% to 40% and pansystolic mitral valve prolapse. Subsequent hospitalization demonstrated non-sustained ventricular tachycardia. He was started on propanolol which was subsequently changed to nadolol.

On August 30, 1981, he had another syncopal episode while having breakfast. This was accompanied by tongue biting and urinary incontinence suggesting a CVA, but his CT-scan was negative. His sleep EEG showed a spike-and-wave discharge in the left temporal area, raising a question of temporal lobe activity.

He was started on phenytoin and his nadolol was changed to quinidine sulfate because of high-grade ventricular ectopy demonstrated on the telemetry monitor.

Electrophysiologic testing was done on April 25, 1986 while he was off antiarrhythmic agents. He had sustained monomorphic VT inducible by right ventricular programmed stimulation with 2 extrastimuli. Post intravenous quinidine (serum level of 2.1 mcg/ml), sustained VT was still inducible. He was subsequently started on oral propafenone, an experimental antiarrhythmic ►

agent. Sustained VT was still inducible on the drug after 7 doses. Consequently, he was started on oral amiodarone. He was stable on this drug for about 18 months, on 300 mg/day.

In October 1987, he underwent pulmonary function testing, which showed a decreased diffusion capacity of 79% (compared to 91% six months earlier). A Gallium lung-scan showed increased uptake. Amiodarone lung toxicity was suspected and the agent was discontinued. One week later, he had a seizure-like episode, raising the suspicion of VT recurrence. He was started on oral tocainide. On this agent, sustained VT was again inducible by programmed ventricular stimulation. Consequently, AICD implantation was recommended to and accepted by the patient.

He underwent implantation of the same device as in Case No. 1 on December 12, 1987, also at Straub Hospital, with a patch-patch electrode configuration using the same surgical approach. The procedure took place without complications, and he is alive and well over one year later.

Discussion

The AICD was invented by Michel Mirowski, MD, currently the director of the Coronary Care Unit at Mount Sinai Hospital in Baltimore. The inspiration for it apparently came in 1967 after his close friend suffered sudden death. After overcoming many obstacles, the first human implant was performed in 1980 at Johns Hopkins University. FDA approval came in 1985.

The current device consists of three components: The generator, the sensing electrodes, and the shocking electrodes. The generator is a large device, in a titanium case measuring 162 (11.2 x 7.1 x 2.5) cm^3 and weighing 292 gm. This is a description of the CPI system, which is currently the only system approved by the FDA for non-experimental implantation in humans. The generator itself is voluminous because of the requirement for a lithium power source and large capacitors, which are needed to accumulate charges of up to 30J in a short period of time. The sensing circuits occupy a relatively smaller volume.

The patient's own cardiac electrical activity is sensed in a bipolar fashion by 2 electrodes. The electrodes may be at the tip of an endocardial lead inserted into the right ventricle (via the subclavian or internal jugular vein), or may be in the form of 2 closely spaced screws implanted onto the epicardial surface.

The shocking electrodes also come in 2 configurations: Spring-patch or patch-patch. In the spring-patch configuration, the negative electrode is in the form of a spring suspended in the superior vena cava (inserted via the subclavian or internal jugular vein). The positive electrode is a wire-mesh patch over the ventricular apex or the lateral aspect of the left ventricle. The patch-patch configuration substitutes the spring electrode with a second patch over the right atrium or right ventricle. The patches come in 2 sizes (10 cm^2 or 20 cm^2) and experimentation with different patch sizes and positions during implantation may be needed in order to obtain the lowest cardioversion and defibrillation thresholds. As a rule, a successful electrode configuration must include the interventricular system in the pathway of the defibrillation current. The larger patch generally provides a lower threshold than the smaller patch or the spring electrode.

When the patient goes into sustained VT or VF, his tachycardia or fibrillatory waves must exceed a certain preset rate in order to activate the device. A charge of 25-30J would then be rapidly accumulated in the capacitor, and that electrical current would be sent through the heart either from the superior vena cava spring electrode or from the right atrial patch electrode to the ventricular apical patch. This generally results in conversion to sinus rhythm. Total duration of time for detection, charge and discharge is about 10 to 20 seconds. If the patient continues in VT or VF, the device would recharge and deliver a second shock. A total of four shocks would be delivered serially, after which the device would require a 35-second interval of normal rhythm before a second series of shocks could be initiated.

All devices are activated when the cardiac electrical activity exceeds a certain rate limit. In some devices, there is also a second detection mechanism called "probability density function" (PDF). This function determines the amount of time during a cardiac cycle in which the electrical activity is isoelectric. During sinus rhythm, much of the PR interval and TP interval is isoelectric. During VT or VF, the electrical potential is non-isoelectric most of the time. Using this characteristic, the PDF can distinguish between sinus and malignant electrical activity. In rate-only units, with the only detection criterion being a rate faster than the preset limit (for example, 155 in the first patient), there are potential shortcomings of false sensing of sinus tachycardia, supraventricular tachycardia, or atrial fibrillation with rapid ventricular response. The PDF serves to safeguard against these possibilities, at the cost of being a more complex apparatus. In actuality, a rate-only device is generally sufficient.

The indications for implantation are generally 2 aborted cardiac arrest or sustained ventricular tachycardia unresponsive to conventional antiarrhythmic therapy. The implantation procedure is a team effort involving the cardiothoracic surgeon and the clinical electrophysiologist. The baseline investigation includes one or more invasive electrophysiologic studies, to define the arrhythmias involved and their respective responses to therapy. If a patient should have a concurrent supraventricular tachycardia, this will need to be suppressed in order to avoid false triggering of the device. The patient should, ideally, have a baseline treadmill test in order to assess his maximum sinus response to exercise. If this is high, then beta-blockade may be indicated in order to keep the maximum sinus rate below the device's rate limit. In most cases, a baseline cardiac catheterization with coronary angiography is necessary to rule out significant anatomical coronary disease, which should also be addressed at the time of implantation.

During surgery, the heart is exposed using one of several approaches (median sternotomy, left lateral thoracotomy, or subcostal thoracotomy); median sternotomy is the most popular because it achieves the best exposure. The patient is first placed under general ►

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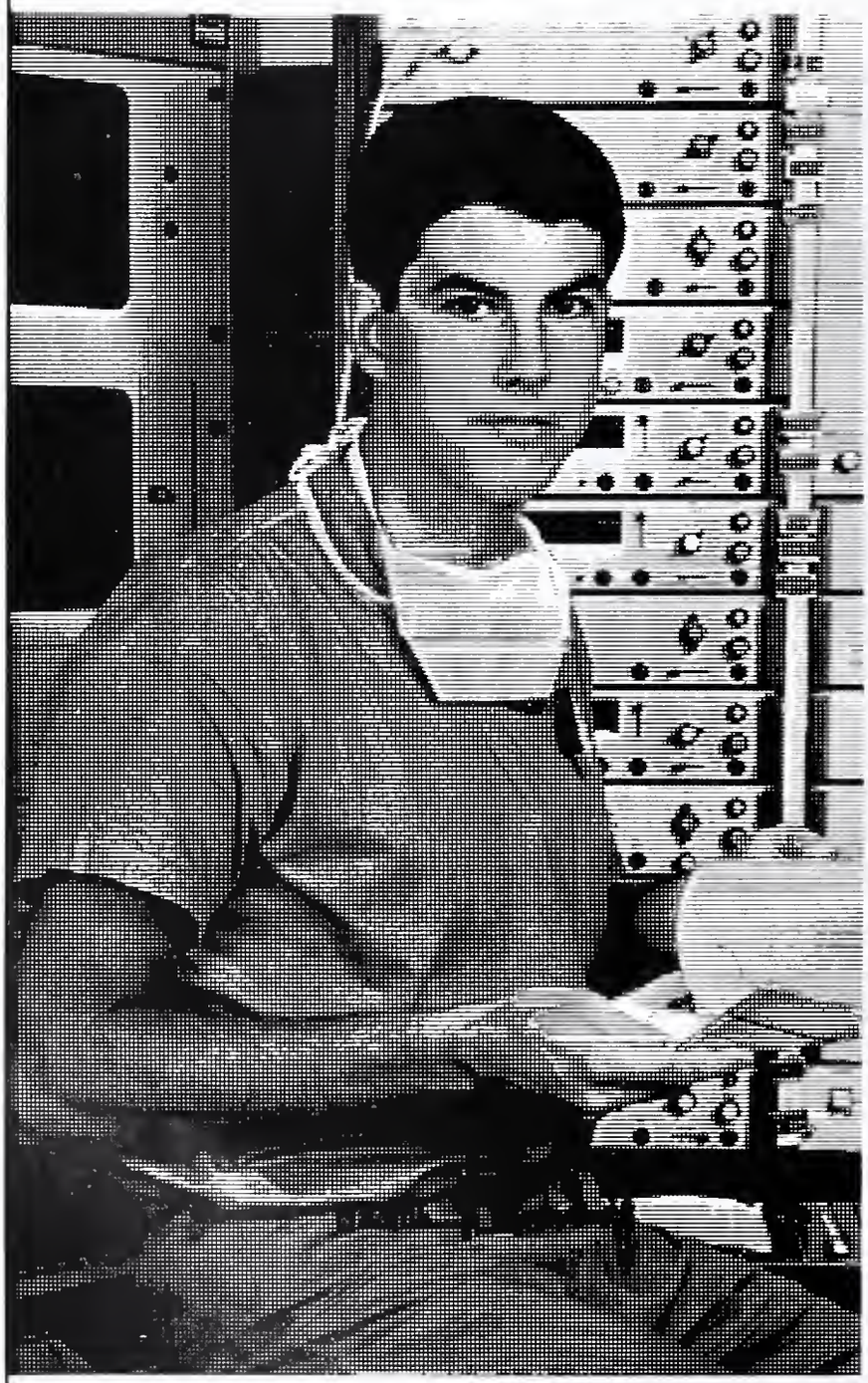
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anesthesia. Ventricular tachycardia and then ventricular fibrillation are induced by the electrophysiologist and the cardioversion and defibrillation thresholds and optimal spring-patch or patch-patch configurations are determined. Nowadays, the patch-patch configuration is more commonly used. Then the device is connected to the appropriate leads and the arrhythmias are again induced, to assess appropriate sensing and shocking by the actual device itself. Subsequently, the generator is placed in an abdominal pocket over the rectus muscle. The final configuration of the various electrodes and generator for our two patients is shown in Figure 2.

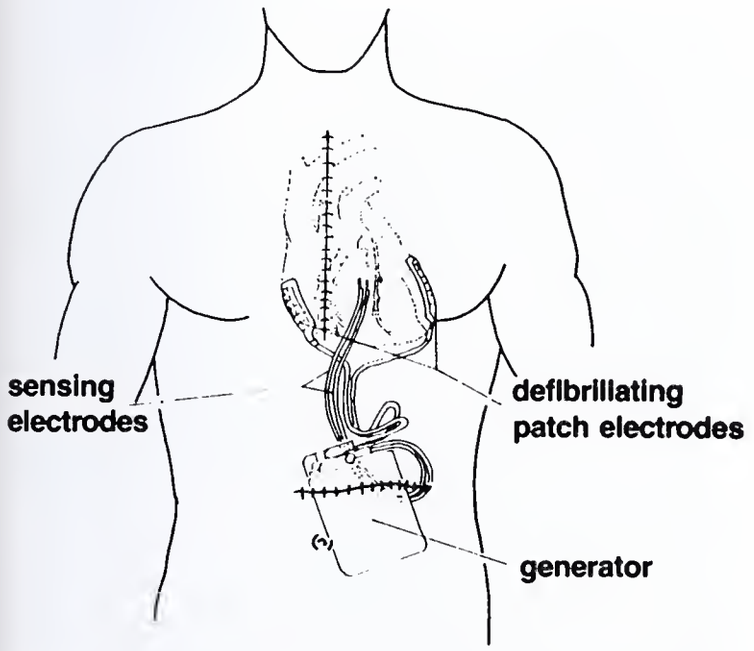


Figure 2: The electrode and generator positions in our implant patients.

The generator has sufficient energy for approximately 100 discharges, over an estimated 2-year span. It should be checked every 2 months for the first year and then every month for the second year, with a special device called Aidcheck. A doughnut-shaped magnet is placed briefly over the AICD generator pocket. This maneuver will activate the generator and cause it to charge up and then dump the discharge internally without shocking the patient. The lower the battery reserve, the longer will be the charge-up time, which is recorded by the Aidcheck. When the charge-up time exceeds certain limits, the generator will need to be replaced.

Despite the seeming simplicity of concept and the ease of operation, this device has certain significant drawbacks. The sheer physical size leads to a fairly high incidence of generator-related complications, such as pocket erosion and effusion. The spring electrode is also prone to migrate, leading to its diminishing effectiveness. The battery has only enough capacity for about 100 shocks, and will need to be replaced every 1½ to 2 years. There is also a problem with early decline in some of the earlier models, which sometimes requires even earlier replacement, which increases the cost. The later models have been found to last 2½ to 3 years.

The sensing circuits are "committed." This means that once the device is triggered, it will fire even if the patient has converted back to sinus rhythm before the charge is delivered. There is also a problem in some earlier models with "double counting" (sensing both QRS complexes and T waves, for example). When the device double counts, a sinus rate of 85 per minute may be sensed as a tachycardia rate of 170 per minute and lead to inappropriate discharge. Undoubtedly, in the newer devices from CPI and other manufacturers, most of these problems will be overcome or at least ameliorated. It is foreseeable that they will also have backup bradycardia-pacing, which would allow treatment of postshock bradycardia. Some devices will also incorporate antitachycardia pacing, which is another modality of therapy for VT; this may allow VT conversion in the appropriate patient, with lower consumption of energy.

An important question frequently asked about this device is: "How does it feel?" Generally, at the time of the electrical discharge, the patient has already lost consciousness because of hemodynamic instability the result of the arrhythmia. The most often described experience is one in which they find themselves regaining consciousness while lying on the floor. Our first patient, who had remained conscious during many of the discharges, tolerated it well. He usually saw a flash of light, accompanied by a sound "like a cherry bomb going off," according to his description.

A second question most often asked, and probably the most important one, is: "How well does it work?" It works extremely well. Over 6,000 patients have so far received the device worldwide; the annual death rate from arrhythmia alone is 2% (with the death rate from other causes like heart failure understandably higher). This result is unmatched by any other form of antiarrhythmic therapy (medical or surgical). This figure is especially impressive since one-year survival after sudden cardiac arrest in patients is between 31% and 73%. Since the invention of the external defibrillator, this is without question the single most significant breakthrough in the therapy of life threatening arrhythmias.

Subsequently, there have been another 5 cases of implantation at Straub, and 6 more at Queen's Medical Center. We hope to start a registry of patients who have undergone surgery for arrhythmia in this State. Further reports should be forthcoming.■

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Triumph and tragedy

Francis M. Ikezaki, MD*

The conquest of gout is one of the greatest triumphs in medicine. The achievement, however, has been channeled along a continuing path of human tragedy.

A Long History

Gout has disabled its victims and confounded physicians for centuries, its secrets often unfathomable. The prelude to success lay in a discovery by William Hyde Wollaston a student and fellow at Cambridge University in England, who in 1797 found that uric acid was the principal constituent of gouty tophi[1]. Then, in 1848, Alfred Baring Garrod of University College Hospital, London, showed that a close relationship existed between gout and uric acid. Garrod accomplished this monumental task when he determined by a crude test that uric acid occurred in the serum of gouty patients. This discovery was followed by Garrod's finding of sodium urate deposits on the surface of bones, ligaments, tendon sheaths and tendons, along the tendinous expansions of muscle, and in the articular cartilage, synovial membrane and synovial fluid.[2]

These two findings formed the groundwork, establishing that uric acid deposits were the substances that initiated and perpetuated the inflammation of gouty arthritis.

From a triumphant moment was born a tragedy, however, as Garrod took it upon himself to diagnose a new disease: Rheumatoid arthritis, which was just as difficult and formidable to diagnose as gouty arthritis. Based entirely on the level of uric acid, Garrod concluded that gouty arthritis at the time of "seizure" must show abnormal amounts of uric acid in the blood[2]. Thinking he had discovered a new disease, Garrod set down conclusions that the uric acid level in the blood was the absolute determining factor, and that if the level was zero or trace, by his crude method, it was not gout. Although gout was indeed a scourge, the "new" disease was a new scourge and just as terrible. Even today, few people realize that rheumatoid arthritis was once separated from gouty arthritis solely on the basis of uric acid levels. Thus, the tragic error continues and confuses. In short, disaster followed triumph. Garrod, certain that the figures were irrefutable, and that there had to be a quantitative difference in uric acid to distinguish gout from

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The Differential Diagnosis

Gouty arthritis had presented a complex and difficult picture; many obstacles were to be overcome over time before the disease would be understood fully. For centuries before the basis upon which a physician distinguished one disease process from another was based on the patient's clinical symptoms and the physical findings. Often, a diagnosis was difficult and impossible to establish. What was resorted to was some simple determinant which identified the offending agent.

Gouty arthritis still had to be separated from suppurative inflammation of the joints caused by bacterial infections, such as tuberculosis and gonorrhea. This phase of the complex picture was clarified in laboratories of bacteriologists. In general, the advent of bacteriology and parasitology helped identify bacteria and parasites as the cause of infectious diseases.

The study of nutrition helped to determine the cause of diseases caused by vitamin deficiencies, as in vitamins C and D as causes of scurvy and rickets; this placed further information in the hands of physicians, allowing them to hurdle one more obstacle that stood in the path of clarification of the arthritides.

The science of endocrinology found the causes of diseases-related to hormones, such as hyperparathyroidism.

Another breakthrough came with the discovery that a hypersensitivity reaction in the joints can be caused by the products of beta-hemolytic streptococcus that cause rheumatic fever. And, finally, the electron microscope was able to identify the filterable viruses that can cause arthritis.

Out of necessity, medicine came to depend more upon laboratory tools and procedures for identifying many disease processes, instead of clinical findings.

Garrod's dilemma was that his gouty arthritis patients did not all show an elevated level of uric acid. He found that menstruating females with gouty arthritis have only traces to normal levels of uric acid in the serum. Among his first 500 cases of arthritis that had "normal" uric acid levels, 411 were females.[1] In these female "gouty" patients with "normal" uric acid levels Garrod could not be aware of a crucial factor: Estrogen in the menstruating female has an uricosuric effect. Therefore, the determination of uric acid levels in menstruating females was not diagnostic. Other variants of arthritis were to emerge later to satisfy Garrod's conclusion that if the uric acid level was not high, it was a "new" disease, rather than gout.

Garrod published his work in 1859. Although uric acid ►



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levels in the blood varied, clinical findings did not correlate with them. In spite of Garrod's dictum, to the discerning eyes of other physicians they were all identical types of inflammatory arthritis.

Jean Charcot of France, relying in 1881 on his clinical and pathological findings, challenged the classification of a new disease based on uric acid figures alone. Charcot found all chronic arthritis to be mere variants of gout and, not withstanding the uric acid levels, suggested they should all be under a single classification. The German pathologist Rudolf Virchow also concluded that clinical variants of non-infective chronic arthritis did not constitute a separate disease.[1]

Something was wrong. The test performed on the blood did not fit the clinical and pathological findings. Was the laboratory test becoming a substitute for doctors? Despite the opposition of these two physicians, Garrod's uric acid levels prevailed — as determinants of two disease entities, and despite their clinical and pathological findings, these two great medical minds were silenced by Garrod. Charcot and Virchow were later to be vindicated, with proof that laboratory figures are not the absolute in medicine.

Scudamore, a physician in England who taught Garrod, even in his time, thought gout was becoming overclassified. He wrote, "it is always dangerous to frame distinctions without (there being an actual) difference"[1].

The variants that seemed to corroborate Garrod's conclusion, proliferated. Back in 1802 William Heberden had written of a variant of arthritis which manifested itself as "chronic rheumatism"[1]. It was non-acute, non-fulminating and progressed slowly, its manifestation so slow that the inflammation in the joints and connective tissue became apparent only after the joints became deformed and weakened — osteoarthritis.

To some observers there were three types of arthritis: The fulminating and the acute podagra, (the Greek word for entrapment of the foot) the intermediate type that Garrod called rheumatoid arthritis, and the very low grade, non-inflammation type called osteoarthritis. The distinction between the three seemed to be based on intensity and the rate of progression. Even before osteoarthritis was adequately identified, Heberden's note on osteoarthritic nodes found on the terminal finger joints became accepted as diagnostic of chronic arthritis. He had erroneously concluded (see below) that it had no relationship to gout[1]. The publication of Heberden's work in 1802, then Garrod's in 1859, saw gout, as such, lose much of its domain over arthritis.

Garrod had many supporters who felt that women, and a few men, had a disease other than gout. Robert Adams, an Irish physician in Dublin, called these patients "chronic rheumatic arthritics." He arbitrarily separated osteoarthritis as a disease of the larger joints, from rheumatoid arthritis as having a predilection for the smaller joints. Adams noted that in the female with chronic rheumatic arthritis the disease affected many joints simultaneously with a common complaint of morning stiffness[1]. Were there histologic and anatomic differences between the large and small joints? Was there confirmation regarding a comparatiave difference in the joints between the male and female? Was there a difference in the inflammatory process between gout and other types of arthritis? These questions were not answered.

Gout

Gout was a violent, acutely painful seizure of the great toe. Its violent pain was accomplished by "tension and laceration." Gout was podagra. Podagra was gouty inflammation of the joint of the big toe, accompanied by chills and fever. Sydenham's description of podagra made it synonymous with gout, and the moderate inflammation suffered by women who could continue their daily tasks despite pain, was not gout in his estimation; it was not incapacitating like podagra. Socially and economically, those who suffered the former were poor, performed menial household work, were uneducated and female. Diet and heredity were not factors, he said.

James Gillray, J. Rowlandson and George Cruickshank drew cartoons and made caricatures and wrote lampoons that popularized the fables of the rich and famous[1]. As the doctrine, later proven false, spread, gout was made to give up its overall domain in the human body. Gout, sometimes a polyarticular disease, was demoted to being only a simple monoarticular disease of the toe[1].

In truth, the severity of the gouty inflammation is determined by the concentration of sodium urate in the tissues. The higher the concentration of uric acid in the blood, over a period of time, the higher the sodium urate concentration in the tissues.

Compared, the female and male gouty arthritic appear to suffer from two distinct diseases. Podagra of the male, an acute fulminating, intensely crippling inflammation of the great toe, is due to a high concentration of sodium urate causing tophi. The man could not walk and was stricken with pain.

The woman, on the other hand, was able to continue menial tasks, though at a slower pace. There seemed to be distinct differences; the gouty arthritis of the woman was rarely manifested as podagra. Women had a lesser intensity of pain and milder sypmtoms.

It seems that trauma due to repetitive movements determines the site of predilection for arthritis; the more frequently a site is subject to wear, the greater the susceptibility of the joints to arthritis. Female occupations of washing, cooking and sewing, activities involving both hands and frequent immersion in cold water, produce bilateral symmetrical, polyarticular gout of the finger joints.

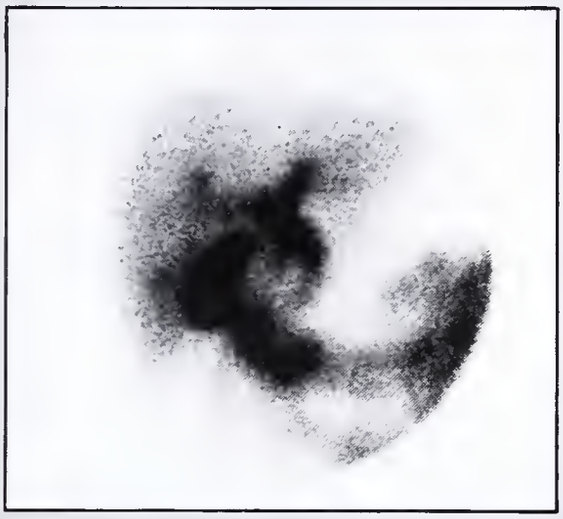
Both Sydenham and Garrod were led astray by the concept that women were not afflicted by gout, based on their milder and more polyarticular symptomatology. That concept is still being parroted today.

It seems that ancient knowledge had been discarded. In ancient times, gout was classified according to an anatomical plan devised by Hippocrates (460-357 B.C.). Cheiragra was gout of the hand, gonagra was gout of the knee, omagra was gout of the shoulder, podagra was gout of the foot, gout arterycke was gout elsewhere and sciatica was gout of the lower back. Hippocrates noted that women developed gout after menopause[1].

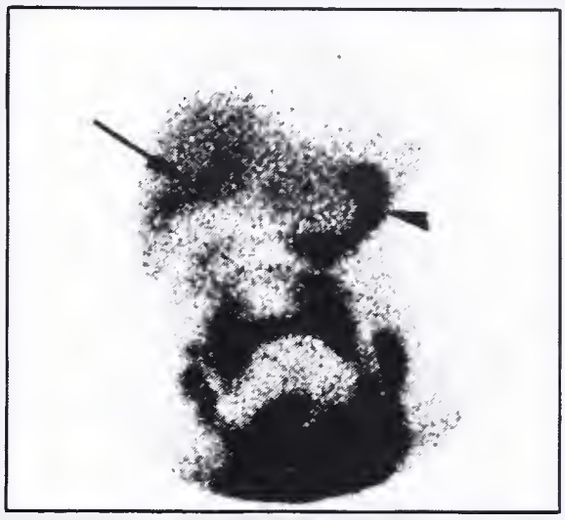
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Nuclear Medicine Teaching File

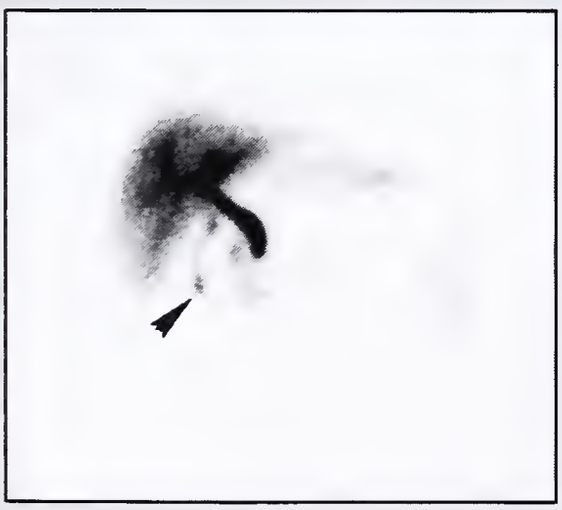
HEPATOBILIARY SCANNING



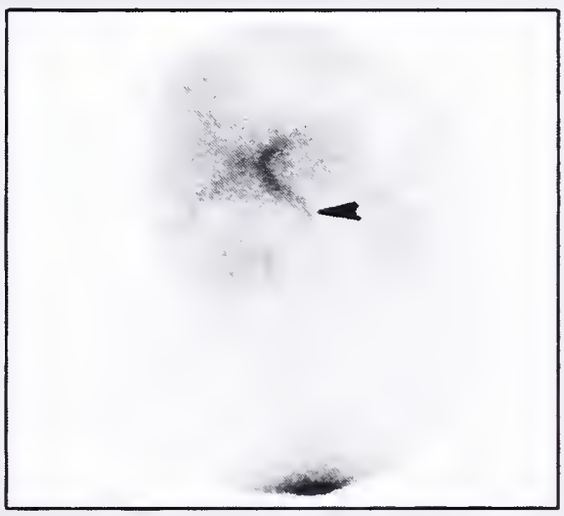
1. Normal appearing gallbladder and bile ducts.



2. Acute Cholecystitis: non-visualized gallbladder; biliary stasis surrounding g.b. fossa (long arrow), entero-gastric reflux (arrow head).



3. Acalculous cholecystitis: nondistensible gallbladder; (arrow head) patent cystic duct.



4. Patent common bile duct (arrow head) in jaundice.

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Consequently, just when it appeared that mankind would grasp a medical victory and be able to conquer "gout" as a monolithic arthritis, two new formidable disease entities were presented. Where there was only one, gout, now there were three as rheumatoid arthritis and osteoarthritis were added to the list in the 1800s.

Osteoarthritis

Osteoarthritis is characterized as a degenerative joint disease of the articular cartilage. The arthritis is accompanied by formation of new bone in the joints and on joint margins. Osteoarthritis is said to involve the hips, knees and the vertebral column. More than half the adult population in the U.S. is said to have some degree of osteoarthritis, the leading cause of disability and immobility.

Radiography resulted in an even greater confusion. G.A. Bannatyne, a Boston radiologist, thought he could distinguish rheumatoid arthritis from osteoarthritis by X-ray. He believed rheumatoid arthritis was due to a generalized microbic disease, and osteoarthritis was due to senile changes[1]. Goldthwait, a Boston radiologist, radiographically classified rheumatoid arthritis and osteoarthritis as atrophic and hypertrophic[1].

The tragedy of this, in terms of human suffering, lies in the inability of modern medicine to recognize and correct an old error, we think. Failure to recognize the errors compounded by Sydenham, Garrod, Heberden and Adams resulted in what we postulate is a medical tragedy.

Freudweiler, a German physician, in 1899, injected sodium urate crystals into animal tissues and produced acute attacks of gout[3]. This experiment was the start on the road to proving Garrod wrong. However, no one paid attention to it as the uric acid levels in the serum and urine did not reflect this happening. Garrod's hallowed proposition had previously decreed that uric acid levels had to be abnormal at the time of an acute gout attack. Therefore, since his proposition had withstood the test, it was correct and incontroversible. No one had dared challenge the proposition; the uric acid level continued to be the determining factor in diagnosis despite Freudweiler's revealing experiment.

Meanwhile, progress in the conquest of gout had moved forward. At the turn of the century Emil Fischer, a German Biochemist, won a Nobel Prize (1902) for his work on the metabolism of purines. Then, in 1911, cincophen was introduced by Weinstraud, a German physician, as an uricosuric agent for the long-term treatment of gout until it was replaced by probenecid in 1951. The conquest of true gout rapidly became possible; deformity and disability caused by gout were recognized as preventable.

This also proved Garrod wrong. Drugs could lower serum uric acid levels to normal, yet gouty arthritis still could recur with attacks. It was apparent that treatment was necessary despite low blood levels of uric acid. Freudweiler had shown that the local concentration of sodium urate was the determining factor. John Talbott took note of this among his patients with the introduction of probenecid in 1951[4].

In 1962 Faires, McCarty, Seegmiller and associates, American physicians, repeated Freudweiler's injection of sodium urate crystals into the skin, subcutaneous tissue and joints, to produce acute attacks of gout in human subjects who had normal uric acid levels[3]. Again, Garrod was proven wrong. Freudweiler had presented scientists with the fact that the local effect of sodium urate concentration was the essential factor, not the serum uric acid level in the blood as Garrod had maintained in his original proposition. *It is astounding that neither Faires, McCarty nor Seegmiller suggested that Garrod was wrong, that the diagnoses of rheumatoid arthritis and osteoarthritis should be banished if there was evidence urate crystals existed in the tissues, and that all patients so diagnosed should be treated for gout.*

Back to RA

While the conquest of gout moved ahead, progress in the treatment of rheumatoid arthritis was beset with problems. Large financial commitments and great effort were expended with very little benefit. Diagnosis is still difficult and controversial. No therapy to date has seriously stopped the destructive and disabling effects of rheumatoid arthritis to any degree. The disease has become characterized as an inflammation of the synovium. It has been resolved as an immunological disease of connective tissue, its origin and cause unknown as the science of rheumatology flounders in a sea of quicksand. The "rheumatoid factor," once thought to be a specific test for rheumatoid arthritis (RA), has been found to be unreliable and non-specific. Nothing pathologically specific, immunologically reliable, clinically identifiable or radiologically constant has been achieved to identify or help diagnose RA. The diagnosis continues to be one of the most difficult to make, the disease a continuing enigma. Garrod thought that a bacterial cause for rheumatoid arthritis soon would be found[1]. It was not. The diagnostic tool of uric acid levels to differentiate gout from rheumatoid arthritis was replaced by a specific test for what was called the rheumatoid factor. However, other inflammatory diseases were also found to test positive. However, physicians came to realize the test was unreliable. In 1949, a physician at the University of Minnesota, Hench, thought he had found the cure for rheumatoid arthritis in cortisone. He received the Nobel Prize for his contribution but disappointment followed as serious side effects appeared and its efficacy waned with time.

As stated previously, with the introduction of his crude uric acid test, Garrod thought he had discovered the means with which he could easily separate gout from rheumatoid arthritis and from osteoarthritis. It was neat and simple. Sydenham had already made clinical gout easier to identify by eliminating from the diagnosis of gout all polyarticular arthritis, and had also made podagra synonymous with gout. He had, in addition, eliminated the diagnosis in women.

The diagnosis of gout had become simpler and the diagnosis of rheumatoid arthritis became popular with the introduction of the "rheumatoid factor." In those who had both hyper-uricemia and a positive rheumatoid factor, the diagnosis of rheumatoid arthritis was made to ►

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prevail. Time, however, had proven the means of identifying rheumatoid arthritis to be unreliable.

Tissue studies offer no clear-cut distinguishing features that separate gout, rheumatoid arthritis and osteoarthritis[5]. The credit has been given to Benjamin Brodie, an English physician, (1783-1862) in 1819 for describing rheumatoid arthritis as a disease that begins as a "synovitis"[2]. Interestingly, Brodie was able to describe rheumatoid arthritis before it was defined clinically, verified it pathologically and the disease was not even identified.

Garrod's unexpected finding of low serum uric acid levels in rheumatoid arthritis and his differentiating it from gout confused the issue. In the minds of the treating physicians and the long-suffering patients with any type of arthritis, the destruction and deformity caused by RA seemed to be a type of illness so far not fully described. The process did not resemble those of the usual viral and bacterial diseases. This surely was not the usual communicable disease. To many there seemed to be no obvious external cause. Yet there was something mysteriously lurking, elusive and constantly damaging, that was diabolically destructive to joints and tissues. A new explanation was necessary. To a keen observer such as Sir Frank McFarland Burnet of Melbourne's Research Institute in Australia, it suggested that an auto-immune reaction may be playing a significant role in the cause and destruction of the arthritic joints and tissues. He postulated that autoantibodies produced by "forbidden clones" could exist, and a fresh approach to solve the dilemma of arthritis was introduced[6].

Historically, the basic foundation for this new approach had been initiated when Antoni Van Leeuwenhoek, a Dutch physician, in 1684, with his new microscope, described the appearance of urate crystals taken from a tophus. The new invention unlocked a new frontier — the microscopic world of subparticles previously invisible to the human eye.

With the aid of the new instrument, Ellie Metchnikoff, a Russian physician, (1845-1916) indulged in many fascinating hours of observing and studying the polymorphonuclear leukocytes and macrophages phagocytizing bacteria. While pursuing these studies he formulated his theory on cellular immunity, demonstrating "autosensitization" to their own spermatozoa in guinea pigs[7].

One who had unusual insight was Paul Ehrlich (1854-1915) of Germany, the "Father of Salversan" or 606 in the treatment of syphilis, who introduced the "side-chain" theory of the antigen-antibody reaction. He had proposed the existence of specific receptors on cells. His far-reaching mind also anticipated the unexpected concept of "horror autotoxicus." The theory anticipated the possibility of "autoreaction" by the body. He had reason to believe that the body could react against "self" components if there was a failure in the regulatory mechanism of immunity. There was the horrid possibility of an endogenous product becoming a stimulus for the body when it became recognized as "foreign," the body thereby mounting an "autoimmune" response. The endogenous substance behaved as a foreign substance perpetuating and amplifying an inflammatory response sustained by the humoral and cellular components of the immune system. Ultimately the body had the capacity to destroy itself totally by its own immune mechanism[7].

The discovery in 1948 by Malcolm M. Hargraves of the Mayo Clinic of the "LE" cell astounded the world[8]. The demonstration of the "LE phenomenon" dramatically illustrated "horror autotoxicus." The neutrophil interacting with antibody and complement had phagocytized the nucleus of a lymphocyte. The body had mounted an immune response against its own nuclear debris — the ultimate illustration of an "autoimmune" disease — the body had turned against itself. Studies have indicated that the sex hormones significantly modulate the expression of autoimmunity, by female showing greater propensity for autoimmune diseases.

In 1961 Daniel J. McCarthy and J. L. Hollander in Wisconsin discovered birefringent sodium urate crystals within the leukocytes of the synovial fluid[8] — another lucid and vivid evidence of "horror autotoxicus." It put gout within the realm of autoimmune diseases. Sodium urate, an endogenous substance, can behave as a noxious substance, becoming antigenic and stimulating an autoimmune response. This astounding discovery demonstrated that gout could behave as podagra in the male, and in the female ameliorated by the female hormones, could present itself essentially as an autoimmune disease, masquerading as rheumatoid arthritis.

Inflammation

Great strides have been made in understanding the inflammatory process. Polypeptides (such as angiotensin, bradykinin and kalliden) have been found to be involved. Derivatives of arachidonic acid (such as prostaglandins, thromboxanes and leukotrienes), as well as other powerful autocoids, now are known to play a prominent part in the inflammatory process.

The Revelation

A product of protein degradation, the end product of nucleic acid metabolism, uric acid, is a constituent of human blood. The "activating" and perpetuating substance, the long sought "initiator" in arthritis and its inflammatory process is the sodium urate crystal, the breakdown product of purine metabolism[8].

Thus, everyone is a potential candidate for gout. Urate crystals begin to deposit in tissues at birth and all dead tissues contribute to the uric acid pool. The cells that line the gastrointestinal tract survive only three days and the white blood cells and platelets, one week. Red blood cells are replaced completely within four months. All contain nucleic acid that contributes to the daily production of uric acid. Cooler peripheral extracellular fluids (such as in the joints, with no active circulation) have a tendency to accumulate sodium urate crystals — in the feet, fingers and ears. (The temperature of the normal knee joint ranges from 30.5 to 32.8 degrees C, which is below the "equilibrium concentration" of 6.8 mg/100ml at 37 degrees C. The intra-articular temperature of the normal knee joint is 32 degrees C. The maximum equilibrium concentration of urate at 30 degrees C. is 4.5 mg/100ml, below which, crystals begin to precipitate.)

Deposits of sodium urate crystals remain dormant until activated or provoked. There are many pathways by ►

MRI CASE OF THE MONTH

TETHERED CORD WITH LIPOMA

Clinical Information: A 7-year-old child with soft tissue mass overlying the dorsal aspect of the lower lumbar spine and sacrum.

Image #1

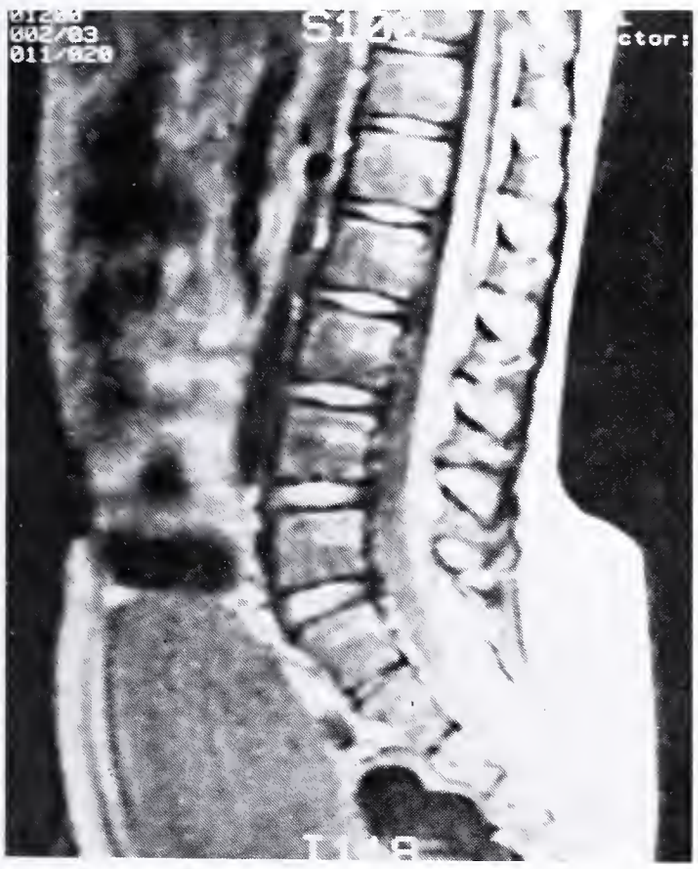


Image # 2



These images were produced by MRI Center of the Pacific using their 1.5 Tesla GE Scanner.

Radiologic Diagnosis: Image #1 shows a tethered cord extending down to the lower border of L5 with an associated small lipoma extending through a spina bifida defect into a larger subcutaneous lipoma. Image #2 is a normal patient for comparison, with the conus at T12 and the cauda equina extending caudally.

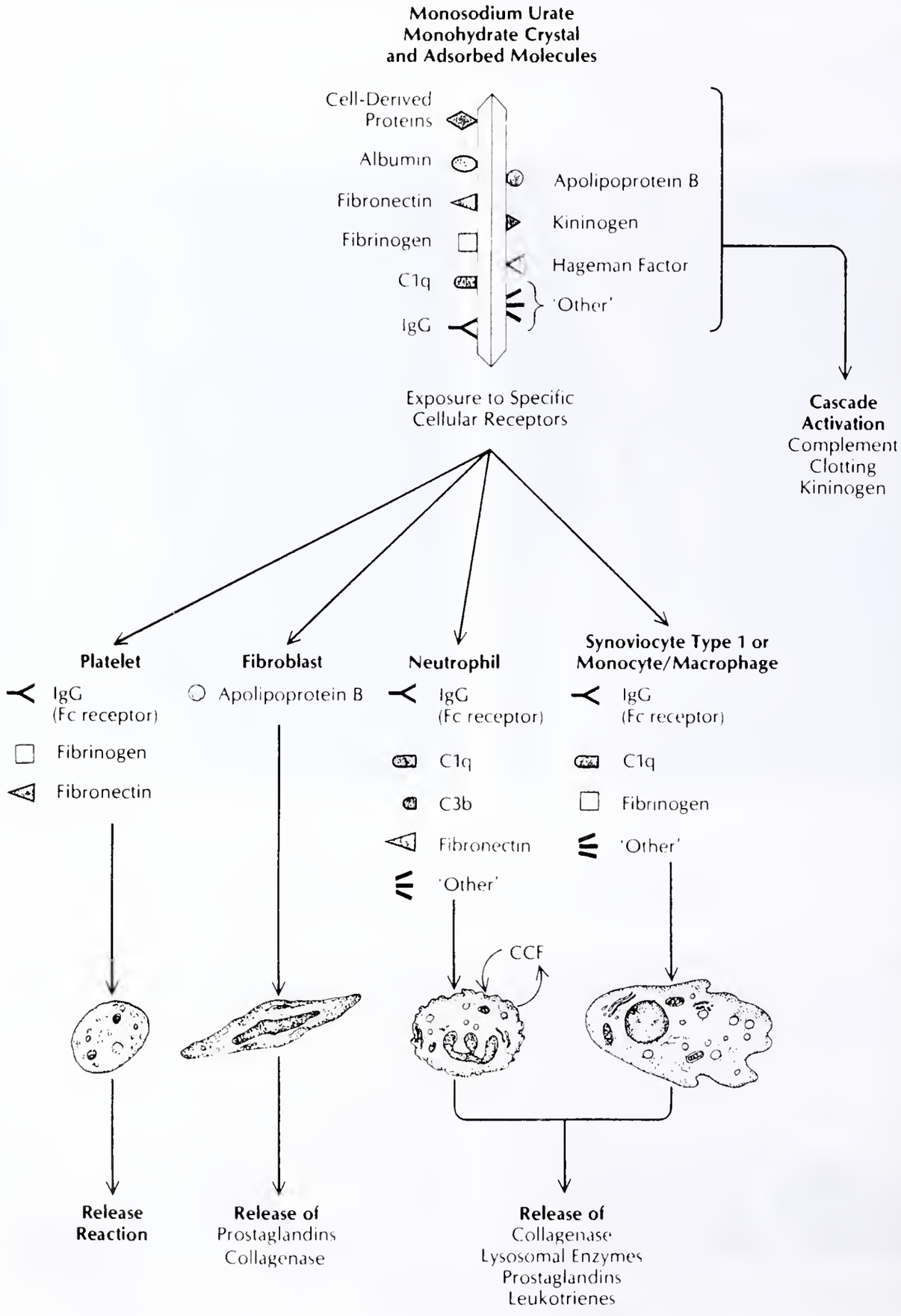
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which gouty tissue can be activated into an inflammatory site. The urate crystals precipitate inflammation by activating the "inflammatory cascade"[8] (Figure 1): Sodium urate crystals activate the Hageman factor, thereby, activating the humoral amplification system composed of complement, coagulation, kinin and the fibrinolytic systems. Phagocytosis of the urate crystals and the disruption of these phagocytic cells results in a rise of intra-articular pressure and release of the chemotactic factor. Molecules in the tissues, which, upon becoming adsorbed

FIGURE 1 (From *Hospital Practice*, October 15, 1986)



onto the sodium urate crystals, form a complex that activates the inflammatory cascade. The molecules that form a complex with sodium urate crystals (which activate the inflammatory process) are cell-derived proteins, albumin, fibronectin, fibrinogen, Ciq, IgG, apolipoprotein-B, kininogen and other unidentified molecules. In addition to activating the humoral amplification system, the formation of sodium urate-molecular complexes activates platelets, fibroblasts, neutrophils and macrophages to release inflammatory sustaining substances that have tissue destroying capacities[8]. The presence of endotoxins appear to be necessary for the inflammatory process to intensify.

In 1971 S. Moncado and J.R. Vane discovered the mode of action of aspirin and aspirin-like drugs, the NSAIDs. Aspirin inhibited the enzyme prostaglandin synthetase. Aspirin-like drugs, by inhibiting the enzyme cyclo-oxygenase, prevented the transformation of arachidonic acid into derivatives that were pro-inflammatory. They showed that all inflammation followed the same biochemical pathway. When cell membranes are distorted or damaged, prostaglandins are released. Prostaglandins of series E and F contributed to the erythema in inflammation. Leakage from the vascular system, caused by prostaglandin, bradykinin, serotonin and histamine, caused swelling. Prostaglandin E1 caused pain and fever. They showed that inflammation was essentially the synthesis of prostaglandin, and a drug which was able to inhibit prostaglandin would produce an anti-inflammatory effect[10].

These drugs are merely palliative; they do not alter the course of the disease, as disfigurement and disability continue. The inflammatory process of arthritis proceeds because the initiating cause is not eliminated. The sodium urate crystals that are formed daily continue to provoke inflammation and immune response.

Desperate situations can require desperate measures. Today new, powerful toxic treatments with new and old drugs are on the horizon. The hazardous uses of azathioprine, methotrexate and cyclophosphamide are being tried. All are immunosuppressants.

Conclusion

It is apparent then that there is no further need to point out the various troublesome inconsistencies with diagnosing rheumatoid arthritis.

Critical inquisition brings up many inconsistencies and contradictions that are in need of re-evaluation and reconciliation. Sober realization that Garrod's old error created a new diagnosis is evident. Upon the error was built further falsehood that was compounded and perpetuated by the new tools of medicine that took physicians further and further away from the truth. It appears that medical progress, instead of moving forward, had been running in circles. How much longer will we allow medical progress to be impeded, stymied by the creation and perpetuation of a false diagnosis? That instead, gout and RA have a common origin and as Talbot said: "One masquerades as the other."

The time for a complete reassessment is overdue. The revealing of truth is enlightening — and refreshing.■

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Council Capers

May 5, 1989

The HMA Council Meeting was called to order by its President, Dr. Allan Kunimoto, on May 5, 1989, after a simple but delicious Korean buffet dinner.

Maui Wowie . . . A secretary's review of the HMA membership roll showed a decline in membership in all counties (Honolulu, Kauai, West Hawaii and Hawaii) except Maui county. Maui's total membership numbers 128. Way to go!

Why Capers? The *Council Capers* was started years ago, in an effort to reach every member of the Maui County Medical Society, to keep them in touch with the activities of the State Medical Association, especially since not every one can come to the County meetings, for some reason or another.

Count me out? . . . Your State Medical Association represents the medical profession in the State of Hawaii, member or not. The work that it does is unbelievable. Just imagine what would happen if there weren't a Hawaii Medical Association, let alone an American Medical Association.

It is so easy to drop out and still reap the benefits of this important group. I implore you to continue your membership and encourage non-members to join.

Case in Point . . . Dr. Calvin Sia, past HMA President and AMA Delegate of the Pediatric Section, summarized the remarkable results that organized medicine achieved in the past 10 years, especially in the field of child care. During this time, gradual inclusion into the agenda included:

1) encouraging a medical home for each child
2) improvement in the Child Protective Services
3) since 1984, the inception of the Healthy Start Program promoted the delivery of care to disadvantaged children ages 3 to 21 years; this was extended most recently by the Legislature, from birth to 21 years
4) implementation of insurance coverage to include well-child visits.

It is to be noted that only through the State Legislature, and especially Sen. Mamoru Yamasaki who has been instrumental, that improvements have occurred in the health delivery services.

Kudos from each of us . . . to Becky Kendro and the Legislative Committee for all the time and effort spent at the recent Senate Legislative Session.

Convention . . . The next HMA Annual Meeting will be conducted on Maui at the Westin in November. Because of the expense of the convention, the commercial booth rate was increased to $800 per booth. The rate increase (from $550) was considered excessive; a motion was made and passed to reduce it to $675 per booth.

Tip Of The Month . . . The next time at a sushi bar, order a California Roll, San Francisco-style. It is delicious.

Denis Fu, MD
Councillor from Maui

Maui in November

Mark your calendars so you will be certain to get to the Westin Maui Hotel on November 10, 11 and 12 for the 1989 HMA Annual Meeting. The meeting hotel is on Kaanapali Beach, only a few miles from the West Maui Airport (which offers a shuttle bus to the hotel). In addition to the morning scientific sessions, there will be ample time to enjoy the breathtaking waterfalls, exotic wildlife, $2.5 million art collection and finest dining. Programs and reservation forms will follow soon, but please note the date now!



Therapeutic use of Dapsone in idiopathic thrombocytopenic purpura

Robert T.S. Jim, MD*

Many drugs can raise the platelet count in idiopathic thrombocytopenic purpura (ITP). Dapsone is another new drug capable of improving the platelet count in ITP.

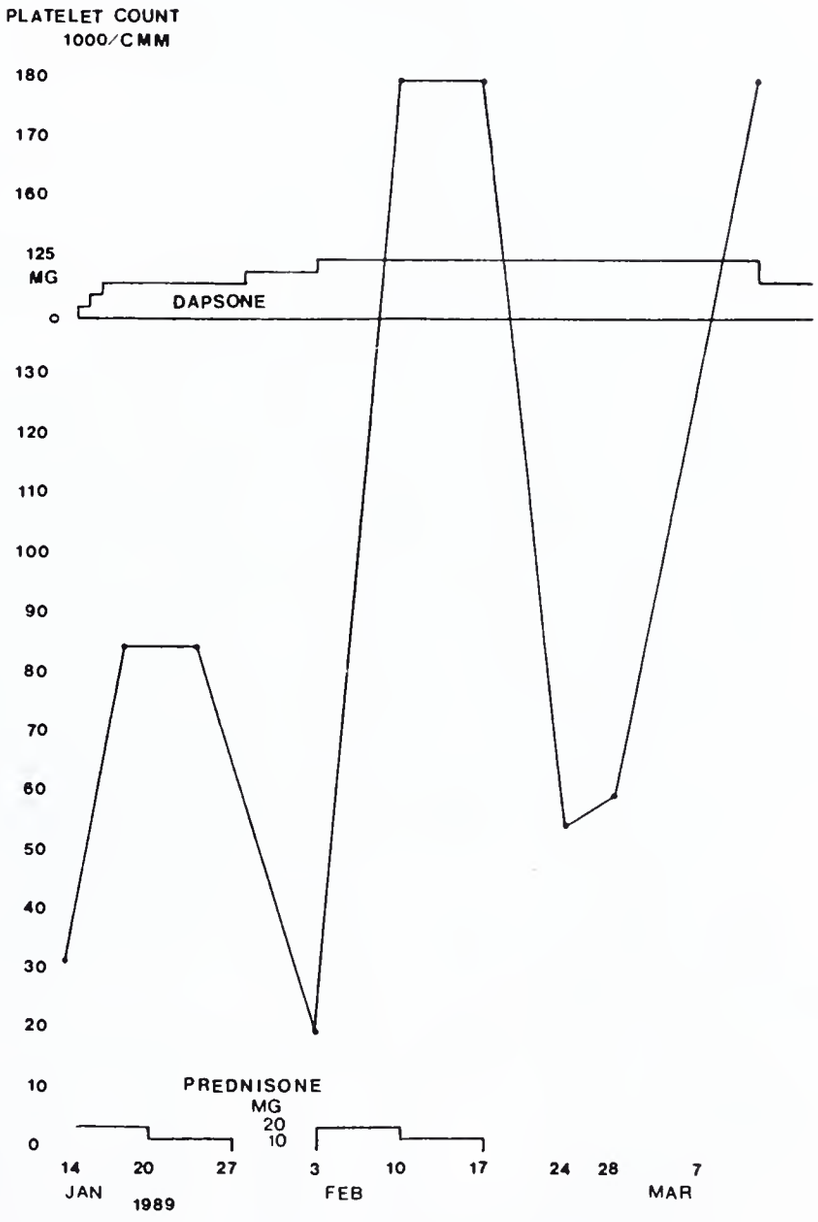
Case 1

A 62-year-old Hawaiian-Chinese-Japanese female elementary school secretary was found to have a platelet count of 42,000/cmm on pre-operative blood count prior to a laryngeal biopsy for hoarseness. She had been taking Proloid for hypothyroidism for years and Questran for hypercholesterolemia for 3 weeks. The family history revealed a-betalipoproteinemia in 4 daughters ages 25 to 35 years. Pertinent physical findings were a coarse, hoarse voice. CBC revealed WBC 8700, hemoglobin 14.7 gm, normal RBD indices and a normal differential but reduced platelets on blood smear. Chemistry profile was normal. ANA and anti-DNA were negative. Bone marrow biopsy revealed megakaryocytic hyperplasia. A diagnosis of ITP was made. Questran was discontinued. Prednisone therapy produced platelet count improvement to 303,000/cmm between September 10 and October 12, 1988. Danazol 600 mg a day given October 4 to December 6, 1988, and colchicine 1 mg daily given December 23, gave a transient rise in platelet count to 115,000/cmm. Dapsone up to 125 mg/day oral combined with prednisone 10-20 mg/day were started on January 14, 1989, resulting in a rise in platelet count to 80,000/cmm by the 26th day (see Figure 1). When prednisone was stopped February 17, the platelet count fell to 22,000/cmm, but rose quickly to 180,000 by March 7 and has remained elevated with Dapsone alone.

Case 2

A 51-year-old Japanese housewife with chronic ITP of 29 years' duration, who showed no sustained remission with splenectomy and subsequently steroids, Cytoxan, Danazol, Vincristine and RhoGAM, showed significant increase in platelet count from 100,000 to 310,000/cmm after 20 days of Dapsone therapy (initially 25 mg/day up to 125 mg/day on the 10th day of therapy) (see Figure 2). No other drugs were given during this period.

FIGURE 1



Discussion

In a recent report[1], a patient with discoid lupus erythematosus, whose skin lesions were being treated with Dapsone, demonstrated surreptitious improvement in the thrombocytopenia. In view of this observation, Dapsone was tried in two chronic ITP patients for whom other drugs or splenectomy provided only temporary or ineffec-

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University of Hawaii School of Medicine
1481 S. King St.
Honolulu, Hawaii

tive benefit. Significant elevation in platelet counts occurred when Dapsone was combined with steroids or given alone. The increases in platelet counts were of greater magnitude when combined with steroids. The combination of Dapsone and steroid appeared more effective than either one alone, and may be due to a synergistic effect. The mechanism by which Dapsone is effective is unknown; however, it may be by immunosuppression of the ITP platelet antibody. Dapsone has immunosuppressive action as evidenced by inhibition of cytotoxicity induced by the myeloperoxidase halide system[2].

Dapsone when given by itself, or when combined with steroids, is another effective and useful agent in the management of ITP.■

FIGURE 2



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Contraindications: VASOTEC® (Enalapril Maleate, MSD) is contraindicated in patients who are hypersensitive to this product and in patients with a history of angioedema related to previous treatment with an ACE inhibitor

Warnings: *Angioedema* Angioedema of the face, extremities, lips, tongue, glottis, and/or larynx has been reported in patients treated with ACE inhibitors, including VASOTEC In such cases, VASOTEC should be promptly discontinued and the patient carefully observed until the swelling disappears In instances where swelling has been confined to the face and lips, the condition has generally resolved without treatment, although antihistamines have been useful in relieving symptoms Angioedema associated with laryngeal edema may be fatal. **Where there is involvement of the tongue, glottis, or larynx likely to cause airway obstruction, appropriate therapy, e.g., subcutaneous epinephrine solution 1:1000 (0.3 mL to 0.5 mL), should be promptly administered.** (See ADVERSE REACTIONS)

Hypotension Excessive hypotension is rare in uncomplicated hypertensive patients treated with VASOTEC alone Heart failure patients given VASOTEC commonly have some reduction in blood pressure, especially with the first dose, but discontinuation of therapy for continuing symptomatic hypotension usually is not necessary when dosing instructions are followed, caution should be observed when initiating therapy (See DOSAGE AND ADMINISTRATION) Patients at risk for excessive hypotension, sometimes associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death, include those with the following conditions or characteristics heart failure, hyponatremia high-dose diuretic therapy, recent intensive diuresis or increase in diuretic dose, renal dialysis, or severe volume and/or salt depletion of any etiology It may be advisable to eliminate the diuretic (except in heart failure patients), reduce the diuretic dose, or increase salt intake cautiously before initiating therapy with VASOTEC in patients at risk for excessive hypotension who are able to tolerate such adjustments (See PRECAUTIONS, *Drug Interactions* and ADVERSE REACTIONS) In patients at risk for excessive hypotension, therapy should be started under very close medical supervision and such patients should be followed closely for the first two weeks of treatment and whenever the dose of enalapril and/or diuretic is increased Similar considerations may apply to patients with ischemic heart disease or cardiovascular disease in whom an excessive fall in blood pressure could result in a myocardial infarction or cerebrovascular accident If excessive hypotension occurs, the patient should be placed in supine position and, if necessary, receive an intravenous infusion of normal saline A transient hypotensive response is not a contraindication to further doses of VASOTEC, which usually can be given without difficulty once the blood pressure has stabilized If symptomatic hypotension develops, a dose reduction or discontinuation of VASOTEC or concomitant diuretic may be necessary

Neutropenia/Agranulocytosis: Another ACE inhibitor, captopril, has been shown to cause agranulocytosis and bone marrow depression, rarely in uncomplicated patients but more frequently in patients with renal impairment, especially if they also have a collagen vascular disease Available data from clinical trials of enalapril are insufficient to show that enalapril does not cause agranulocytosis at similar rates Foreign marketing experience has revealed several cases of neutropenia or agranulocytosis in which a causal relationship to enalapril cannot be excluded Periodic monitoring of white blood cell counts in patients with collagen vascular disease and renal disease should be considered

Precautions: *General Impaired Renal Function* As a consequence of inhibiting the renin-angiotensin-aldosterone system, changes in renal function may be anticipated in susceptible individuals In patients with severe heart failure whose renal function may depend on the activity of the renin-angiotensin-aldosterone system, treatment with ACE inhibitors, including VASOTEC, may be associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death

In clinical studies in hypertensive patients with unilateral or bilateral renal artery stenosis, increases in blood urea nitrogen and serum creatinine were observed in 20% of patients These increases were almost always reversible upon discontinuation of enalapril and/or diuretic therapy In such patients, renal function should be monitored during the first few weeks of therapy

Some patients with hypertension or heart failure with no apparent preexisting renal vascular disease have developed increases in blood urea and serum creatinine, usually minor and transient, especially when VASOTEC has been given concomitantly with a diuretic This is more likely to occur in patients with preexisting renal impairment Dosage reduction and/or discontinuation of the diuretic and/or VASOTEC may be required

Evaluation of patients with hypertension or heart failure should always include assessment of renal function. (See DOSAGE AND ADMINISTRATION)

Hyperkalemia Elevated serum potassium (> 5 7 mEq/L) was observed in approximately 1% of hypertensive patients in clinical trials In most cases these were isolated values which resolved despite continued therapy Hyperkalemia was a cause of discontinuation of therapy in 0 28% of hypertensive patients In clinical trials in heart failure, hyperkalemia was observed in 3 8% of patients, but was not a cause for discontinuation

Risk factors for the development of hyperkalemia include renal insufficiency, diabetes mellitus, and the concomitant use of potassium-sparing diuretics, potassium supplements, and/or potassium-containing salt substitutes, which should be used cautiously, if at all, with VASOTEC (See *Drug Interactions*)

Surgery/Anesthesia In patients undergoing major surgery or during anesthesia with agents that produce hypotension, enalapril may block angiotensin II formation secondary to compensatory renin release If hypotension occurs and is considered to be due to this mechanism, it can be corrected by volume expansion

Information for Patients

Angioedema Angioedema, including laryngeal edema, may occur especially following the first dose of enalapril Patients should be so advised and told to report immediately any signs or symptoms suggesting angioedema (swelling of face, extremities, eyes, lips, tongue, difficulty in swallowing or breathing) and to take no more drug until they have consulted with the prescribing physician

Hypotension Patients should be cautioned to report lightheadedness especially during the first few days of therapy If actual syncope occurs, the patients should be told to discontinue the drug until they have consulted with the prescribing physician.

All patients should be cautioned that excessive perspiration and dehydration may lead to an excessive fall in blood pressure because of reduction in fluid volume Other causes of volume depletion such as vomiting or diarrhea may also lead to a fall in blood pressure, patients should be advised to consult with the physician

Hyperkalemia Patients should be told not to use salt substitutes containing potassium without consulting their physician

Neutropenia Patients should be told to report promptly any indication of infection (e g , sore throat, fever) which may be a sign of neutropenia

NOTE As with many other drugs, certain advice to patients being treated with enalapril is warranted This information is intended to aid in the safe and effective use of this medication It is not a disclosure of all possible adverse or intended effects

Drug Interactions

Hypotension Patients on Diuretic Therapy Patients on diuretics and especially those in whom diuretic therapy was recently instituted may occasionally experience an excessive reduction of blood pressure after initiation of therapy with enalapril The possibility of hypotensive effects with enalapril can be minimized by either discontinuing the diuretic or increasing the salt intake prior to initiation of treatment with enalapril If it is necessary to continue the diuretic, provide close medical supervision after the initial dose for at least two hours and until blood pressure has stabilized for at least an additional hour (See WARNINGS and OOSAGE AND AOMINISTRATION)

Agents Causing Renin Release The antihypertensive effect of VASOTEC is augmented by antihypertensive agents that cause renin release (e g , diuretics)

Other Cardiovascular Agents: VASOTEC has been used concomitantly with beta-adrenergic-blocking agents, methyldopa, nitrates, calcium-blocking agents, hydralazine, prazosin, and digoxin without evidence of clinically significant adverse interactions

Agents Increasing Serum Potassium. VASOTEC attenuates potassium loss caused by thiazide-type diuretics Potassium-sparing diuretics (e g , spironolactone, triamterene, or amiloride), potassium supplements, or potassium-containing salt substitutes may lead to significant increases in serum potassium Therefore, if concomitant use of these agents is indicated because of demonstrated hypokalemia, they should be used with caution and with frequent monitoring of serum potassium Potassium-sparing agents should generally not be used in patients with heart failure receiving VASOTEC

Lithium A few cases of lithium toxicity have been reported in patients receiving concomitant VASOTEC and lithium and were reversible upon discontinuation of both drugs. Although a causal relationship has not been established, it is recommended that caution be exercised when lithium is used concomitantly with VASOTEC and serum lithium levels should be monitored frequently

Pregnancy – Category C There was no fetotoxicity or teratogenicity in rats treated with up to 200 mg/kg/day of enalapril (333 times the maximum human dose) Fetotoxicity, expressed as a decrease in average fetal weight, occurred in rats given 1200 mg/kg/day of enalapril but did not occur when these animals were supplemented with saline Enatapril was not teratogenic in rabbits However, maternal and fetal toxicity occurred in some rabbits at doses of 1 mg/kg/day or more Saline supplementation prevented the maternal and fetal toxicity seen at doses of 3 and 10 mg/kg/day, but not at 30 mg/kg/day (50 times the maximum human dose)

Radioactivity was found to cross the placenta following administration of labeled enalapril to pregnant hamsters

There are no adequate and well-controlled studies in pregnant women. VASDTEC® (Enalapril Maleate, MSO) should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus

Nursing Mothers Milk in lactating rats contains radioactivity following administration of ^{14}C enalapril maleate. It is not known whether this drug is secreted in human milk Because many drugs are secreted in human milk, caution should be exercised when VASDTEC is given to a nursing mother

Pediatric Use Safety and effectiveness in children have not been established

Adverse Reactions: VASOTEC has been evaluated for safety in more than 10,000 patients, including over 1000 patients treated for one year or more VASOTEC has been found to be generally well tolerated in controlled clinical trials involving 298/ patients.

Hypertension The most frequent clinical adverse experiences in controlled trials were headache (5 2%), dizziness (4 3%), and fatigue (3%)

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in controlled clinical trials were diarrhea (1 4%), nausea (1 4%), rash (1 4%), cough (1 3%), orthostatic effects (1.2%), and asthenia (1 1%)

Heart Failure. The most frequent clinical adverse experiences in both controlled and uncontrolled trials were: dizziness (7 9%), hypotension (6 7%), orthostatic effects (2.2%), syncope (2 2%), cough (2 2%), chest pain (2 1%), and diarrhea (2 1%)

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in both controlled and uncontrolled clinical trials were: fatigue (1 8%), headache (1 8%), abdominal pain (1 6%), asthenia (1 6%), orthostatic hypotension (1 6%), vertigo (1 6%), angina pectoris (1 5%), nausea (1 3%), vomiting (1 3%), bronchitis (1 3%), dyspnea (1 3%), urinary tract infection (1.3%), rash (1 3%), and myocardial infarction (1.2%).

Other serious clinical adverse experiences occurring since the drug was marketed or adverse experiences occurring in 0 5% to 1% of patients with hypertension or heart failure in clinical trials in order of decreasing severity within each category

Cardiovascular Myocardial infarction or cerebrovascular accident, possibly secondary to excessive hypotension in high-risk patients (see WARNINGS, *Hypotension*), cardiac arrest, pulmonary embolism and infarction, rhythm disturbances, atrial fibrillation, palpitation

Digestive Ileus, pancreatitis, hepatitis or cholestatic jaundice, melena, anorexia, dyspepsia, constipation, glossitis

Nervous/Psychiatric Depression, confusion, ataxia, somnolence, insomnia, nervousness, paresthesia

Urogenital Renal failure, oliguria, renal dysfunction (see PRECAUTIONS and DOSAGE AND ADMINISTRATION), prostate hypertrophy

Respiratory Bronchospasm, rhinorrhea, asthma, upper respiratory infection

Skin. Herpes zoster, pruritus, alopecia, flushing, photosensitivity

Other Muscle cramps, hyperhidrosis, impotence, blurred vision, taste alteration, tinnitus

A symptom complex has been reported which may include fever, myalgia, and arthralgia, an elevated erythrocyte sedimentation rate may be present Rash or other dermatologic manifestations may occur These symptoms have disappeared after discontinuation of therapy

Angioedema Angioedema has been reported in patients receiving VASOTEC (0 2%) Angioedema associated with laryngeal edema may be fatal If angioedema of the face, extremities, lips, tongue, glottis, and/or larynx occurs, treatment with VASOTEC should be discontinued and appropriate therapy instituted immediately (See WARNINGS)

Hypotension: In the hypertensive patients, hypotension occurred in 0 9% and syncope occurred in 0 5% of patients following the initial dose or during extended therapy Hypotension or syncope was a cause for discontinuation of therapy in 0 1% of hypertensive patients In heart failure patients, hypotension occurred in 6 7% and syncope occurred in 2 2% of patients Hypotension or syncope was a cause for discontinuation of therapy in 1.9% of patients with heart failure (See WARNINGS)

Clinical Laboratory Test Findings

Serum Electrolytes Hyperkalemia (see PRECAUTIONS), hyponatremia

Creatinine, Blood Urea Nitrogen In controlled clinical trials, minor increases in blood urea nitrogen and serum creatinine, reversible upon discontinuation of therapy, were observed in about 0 2% of patients with essential hypertension treated with VASOTEC alone Increases are more likely to occur in patients receiving concomitant diuretics or in patients with renal artery stenosis (See PRECAUTIONS.) In patients with heart failure who were also receiving diuretics with or without digitalis, increases in blood urea nitrogen or serum creatinine, usually reversible upon discontinuation of VASOTEC and/or other concomitant diuretic therapy, were observed in about 11% of patients Increases in blood urea nitrogen or creatinine were a cause for discontinuation in 1 2% of patients

Hemoglobin and Hematocrit Small decreases in hemoglobin and hematocrit (mean decreases of approximately 0 3 g % and 1 0 vol %, respectively) occur frequently in either hypertension or heart failure patients treated with VASOTEC but are rarely of clinical importance unless another cause of anemia coexists In clinical trials, less than 0 1% of patients discontinued therapy due to anemia

Other (Causal Relationship Unknown): In marketing experience, rare cases of neutropenia, thrombocytopenia, and bone marrow depression have been reported

Liver Function Tests Elevations of liver enzymes and/or serum bilirubin have occurred

Dosage and Administration: *Hypertension* In patients who are currently being treated with a diuretic, symptomatic hypotension occasionally may occur following the initial dose of VASOTEC The diuretic should, if possible, be discontinued for two to three days before beginning therapy with VASOTEC to reduce the likelihood of hypotension (See WARNINGS) If the patient's blood pressure is not controlled with VASOTEC alone, diuretic therapy may be resumed

If the diuretic cannot be discontinued, an initial dose of 2 5 mg should be used under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour (See WARNINGS and PRECAUTIONS, *Drug Interactions*)

The recommended initial dose in patients not on diuretics is 5 mg once a day Oosage should be adjusted according to blood pressure response The usual dosage range is 10 to 40 mg per day administered in a single dose or in two divided doses In some patients treated once daily, the antihypertensive effect may diminish toward the end of the dosing interval In such patients, an increase in dosage or twice-daily administration should be considered If blood pressure is not controlled with VASOTEC alone, a diuretic may be added

Concomitant administration of VASOTEC with potassium supplements, potassium salt substitutes, or potassium-sparing diuretics may lead to increases of serum potassium (see PRECAUTIONS)

Dosage Adjustment in Hypertensive Patients with Renal Impairment The usual dose of enalapril is recommended for patients with a creatinine clearance >30 mL/min (serum creatinine ot up to approximately 3 mg/dL) For patients with creatinine clearance ≤30 mL/min (serum creatinine ≥3 mg/dL), the first dose is 2 5 mg once daily The dosage may be titrated upward until blood pressure is controlled or to a maximum of 40 mg daily

Heart Failure VASOTEC is indicated as adjunctive therapy with diuretics and digitalis The recommended starting dose is 2 5 mg once or twice daily After the initial dose of VASOTEC, the patient should be observed under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour (See WARNINGS and PRECAUTIONS, *Drug Interactions*) If possible, the dose of the diuretic should be reduced, which may diminish the likelihood of hypotension The appearance of hypotension after the initial dose of VASOTEC does not preclude subsequent careful dose titration with the drug, following effective management of the hypotension The usual therapeutic dosing range for the treatment of heart failure is 5 to 20 mg daily given in two divided doses The maximum daily dose is 40 mg Once-daily dosing has been effective in a controlled study, but nearly all patients in this study were given 40 mg, the maximum recommended daily dose, and there has been much more experience with twice-daily dosing In addition, in a placebo-controlled study which demonstrated reduced mortality in patients with severe heart failure (NYHA Class IV), patients were treated with 2 5 to 40 mg per day of VASOTEC, almost always administered in two divided doses. (See CLINICAL PHARMACOLOGY, *Pharmacodynamics and Clinical Effects*) Dosage may be adjusted depending upon clinical or hemodynamic response (See WARNINGS)

Dosage Adjustment in Heart Failure Patients with Renal Impairment or Hyponatremia: In heart failure patients with hyponatremia (serum sodium <130 mEq/L) or with serum creatinine >1 6 mg/dL, therapy should be initiated at 2 5 mg daily under close medical supervision (See DOSAGE AND ADMINISTRATION, *Heart Failure,* WARNINGS, and PRECAUTIONS, *Drug Interactions.*) The dose may be increased to 2 5 mg b i d , then 5 mg b i d. and higher as needed, usually at intervals of four days or more, if at the time of dosage adjustment there is not excessive hypotension or significant deterioration of renal function. The maximum daily dose is 40 mg

For more detailed information, consult your MSD representative or see Prescribing Information Merck Sharp & Dohme, Division of Merck & Co., Inc , West Point, PA 19486 J6VS18R(815)

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HMJ Report

Report on the results of the Sixth Medical Examination of Atomic Bomb Survivors Resident in North America (1987)

Dr. Sumio Sugimoto, current President of the Hiroshima Prefectural Medical Association (sister association to the HMA), heads the list of authors of the report of the team that came to examine the Hibakusha (atom bomb survivors) resident in Canada, the USA mainland, Oahu and Maui between June 16 and July 16, 1987. The other co-authors included Chikako Ito, Sanshiro Uraki, Kazuo Neriishi, Kazunormi Kodama. Kiyoto Nishimura and Tokuro Tsubokura, presumably also on the team of examiners.

Another team will have returned to Hawaii by the time this review of the 1987 reports meets the eye of the reader of the JOURNAL. Under the leadership of Dr. K. Hirata and including Dr. Chikako Ito (she is a returnee), the examiners scheduled to attend are Drs. Sasaki, Ishibashi and Dote; they were to arrive on July 4, to conduct the examinations of the Kibei Nisei or Kika Nisei (as those born in the United States but in Japan for their education at the time of the outbreak of World War II are known) on Maui on the 7th, and then on Oahu on the 8th and 9th, Saturday and Sunday, at Kuakini's Hale Pulama Mau. The officers and others of the Hawaii Medical Association will have hosted the visitors and the officials of the local Friends of the Hibakusha/Hawaii, President Hirano and Secretary Mae Oda, at a luncheon on Wednesday, July 5.

The first such examination took place in March of 1977. A total of 751 Hibakusha have been examined in North America in the 10 year period since then out of an estimated population of a thousand. The numbers have increased gradually and many have probably not availed themselves of the free service for reasons that are quite understandable: Fear of being revealed as having been exposed to radiation, a) which might preclude getting jobs, b) getting married and producing offspring, and most importantly c) not being able to apply for medical or life insurance. In Japan, the Hibakusha are registered and provided with lifetime medical care at societal expense.

Despite Senator Matsunaga's attempts through Congressional legislation, he has not succeeded in persuading this nation to provide for these innocent Japanese-American citizens, that were caught in Hiroshima and Nagasaki when the US dropped the atomic bombs in 1945, with periodic follow-up examinations and medical care as our obligation.

Nearly 26% of the 751 were exposed within the limit of 2 kilometers from the epicenter. Fourteen were in utero at the time (6 within the 2 km limit). Forty-nine percent of the males were between the ages of 10 and 19, whereas 67.1% of the females were in the age group 10 to 24. Those from Hiroshima account for 90.7% of the survivors.

Thirty have died as of 31 July 1987. California alone has 466 Hibakusha that are registered; 721 reside in 20 states of the US and in Canada. Here in Hawaii there are 145, of which 3 are the offspring of survivors.

Health Handbooks have been issued by the examiners to 60 male and 249 female Hibakusha; these are certificates of exposure. In Japan they would entitle bearers to medical coverage; here in the US they provide only moral support.

The examinations have turned up 23 cases of cancer (as reported in past medical history reviews) in North American Hibakusha. However, this is not related to any data in control groups. The same is true for the rest of the examination data on the incidence of hypertension, anemia, hypo- or hyperthyroidism, PAP smears on women, blood chemistries including glycohemoglobin. Subjective symptoms of fatigue and lassitude are not correlated with the same findings in Japan, nor with control groups in the US.

One gets the impression that the 10 years of examining the Hibakusha in North America have not elicited any remarkable effects that can be ascribed to radiation exposure 42 years ago.

J.J. Frederick Reppun, MD
Editor

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Readers Express Their Views

The minutes were kept, but the hours were lost.

It was a pleasant spring evening at the well-attended April meeting of the Hawaii Ophthalmological Society conducted at the Pacific Club. An outstanding program presented by Greg Kokame covering the always ominous specter of endophthalmitis was the highlight of the program. A letter was read from the Pennsylvania Ophthalmology group suggesting that we consider unifying our membership with the AAO. No support for the idea was forthcoming, and the members present voted to send a return message stating that such an action is restrictive, coercive, un-American, and of slightly less value than the hair on your sweetie's upper lip.

Man is a social animal.

And our ranks continue to swell with the addition of Stefan Karas and Scott Kortvelesy as new members. Welcome, gentlemen, may the farce be with you, and remember that we are geniuses up to the age of 10; furthermore, it is a wise man who puts aside 10% of the money he earns — and discards 90% of the advice.

Man was created a little lower than the angels, and has been getting a little lower ever since.

The liars continue to figure, while the figures . . . Except for those who have been in hibernation for the last six months, all know that Congress is preparing to reduce physician reimbursement under Part B of Medicare. The fact is that Part B spending has increased at a rate far beyond inflation since 1980. However, what is not acknowledged, is that much of that increase has been in outpatient spending since Medicare has forced many procedures out of the hospital. While the percentage of physician spending was 72% in 1984, it was down to 61% in 1986. Meanwhile, outpatient hospital spending jumped from 16% to 28% of the Part B dollar. So what is in line for reduction? Yes of course, it is the physician portion: The current acronym — BOHICA — Bend over, here it comes again!! But, it will be kinder and gentler.

(Continued on page 286)

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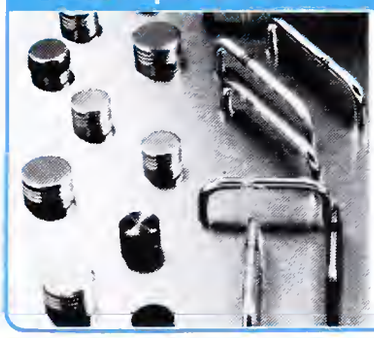
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READERS EXPRESS THEIR VIEWS

(Continued from page 285)

There are incompetent enthusiasts, and they are a very dangerous lot.

As if the free practice of medicine were not already in serious jeopardy, now the PPRC (Physician Payment Review Commission), supposedly the real word to Congress, has come out with some frightening recommendations that will be presented to Capitol Hill this month. The current phrase is "expenditure targets." Read my double talk — rationing! Cataract reimbursement would be moderated from the Hsiao 56% reduction to a nationwide average reduction of 24%. Some other accompanying plans are new caps on balance billing, certain categories of mandatory assignment, and a lock on the RAP physicians (radiologist, anesthesiologist, pathologist) and emergency physician. Notice that the E is left off the commission's jargon to avoid describing the obvious.

Everything is dangerous.

For years, researchers have been trying without success to link coffee consumption to cancer, heart disease, hypertension, hangnail, asthma, gout, scabies, or some dire physical condition beyond halitosis. Now, apparently four or more cups a day will increase the risk of heart attack by one-third, compared to non-coffee-drinkers. Egad, what is next — Oreo cookies? Mother's milk? Twinkies? Poi?

In search of the deep pocket.

More medical malpractice suits were filed in the decade ending in 1987 than in the entire previous history of American tort law. Liability accounts for 30% of the price of a stepladder, 95% of the price of vaccines, 33% of the cost of a small airplane. Damage claims against cities doubled between 1982 and 1986.

In search of some other's pocket.

"In my opinion, advertising by a professional is a form of stealing. We all know that it's OK for business people to steal ("attract") each other's customers, and that advertising that you or your product is better than the other guy's (whether it is or not) is one way to do this. So I don't advertise." *Robert C. Drews, MD*

Aloha and keep the faith.

—Russell T. Stodd, MD

From the WEATHERVANE
Vol. 6, No. 5, May 1989
Hawaii Ophthalmological Society Newsletter

COCAINE IS GETTING BETTER AND BETTER.

How many products do you know of where the quality keeps going up, while the price keeps coming down?

Well, that's just how it is with cocaine these days. The supply is plentiful. The purity is frightening. And, yes, the cost is way down: as little as five dollars can buy a hit of crack.

Unfortunately, the price the rest of us pay has gone sky-high. Not only is cocaine, in all its forms, more available, but the potency is resulting in a plague of mental and physical disorders, from acute anxiety and depression to sudden heart failure and death.

In just the last 12 months, there have been 7 cocaine-related deaths reported in Hawaii. Reported.

Then there's the crime and violence that go hand-in-hand with intoxication and addiction.

Some people still think cocaine is glamorous. Or harmless.

It isn't either.

And it won't go away if we ignore it.

If you have friends or family who use cocaine, get involved. Give them a rough time. Because, if you don't, it's certain the drug will.



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MRI CASE OF THE MONTH

HEMANGIOBLASTOMA

Clinical History: 16 year old female with headaches and intermittent dizziness.

Radiologic Diagnosis: The ability of MRI to image the posterior fossa define both the nature and extent of the cerebellar hemangioblastoma. The patient is a 16 year old female with 2½ months of headaches and intermittent dizziness. The scan demonstrates:

1

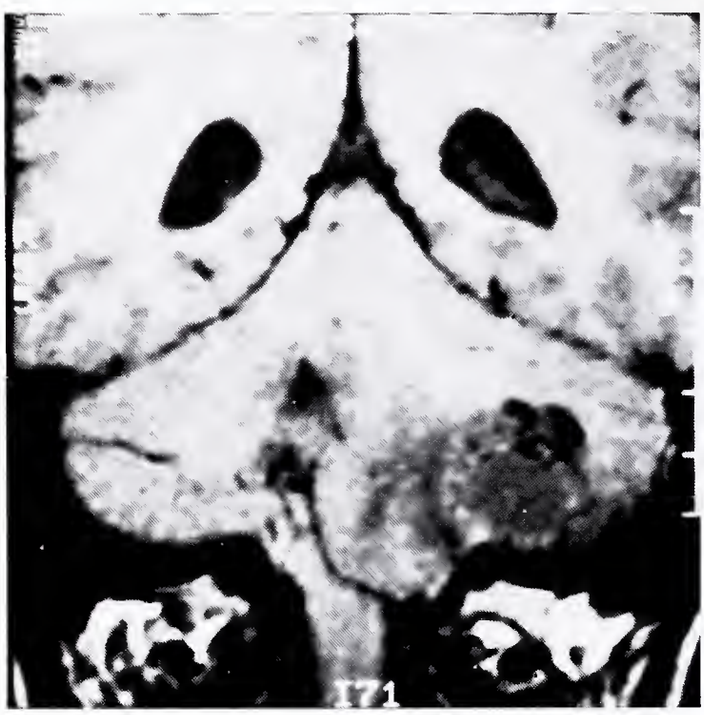


Figure 1
T1 coronal tomogram. There is a round mass with an iso-intense rim of tissue with low signal intensity structures (flow-void). The central portion of the mass has low signal intensity as compared to gray and white matter. The fourth ventricle and the cerebellar structures are displaced to the right.

2

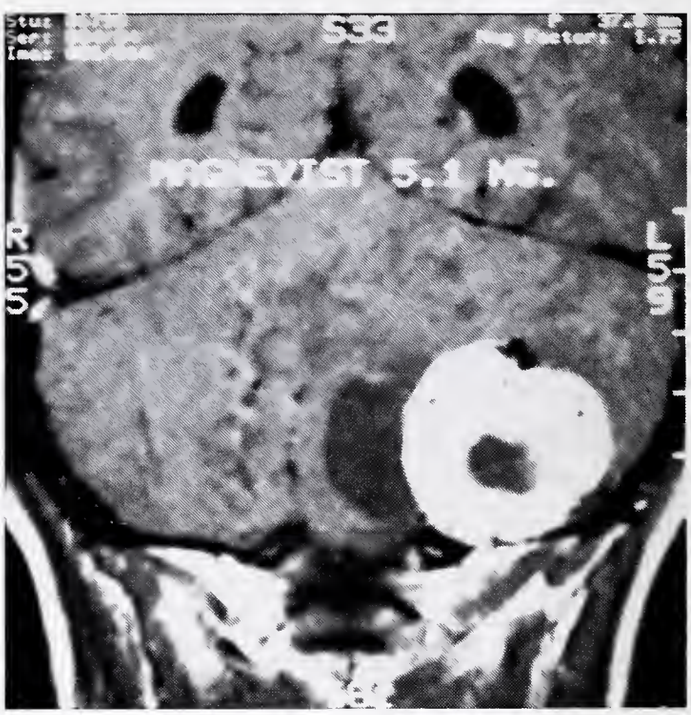


Figure 2
T1 contrast enhanced coronal tomogram. After gadolinium-DTPA injection there is contrast enhancement of the rim of the necrotic tumor. Multiple blood vessels are demonstrated in the rind of the tumor. This is virtually diagnostic of a hemangioblastoma.

These images were produced by MRI Center of the Pacific using their 1.5 Tesla GE Scanner.

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VASOTEC is available in 2.5-mg, 5-mg, 10-mg, and 20-mg tablet strengths.

Contraindications: VASOTEC® (Enalapril Maleate, MSD) is contraindicated in patients who are hypersensitive to this product and in patients with a history of angioedema related to previous treatment with an ACE inhibitor.

Warnings: *Angioedema* Angioedema of the face, extremities, lips, tongue, glottis, and/or larynx has been reported in patients treated with ACE inhibitors, including VASOTEC. In such cases, VASOTEC should be promptly discontinued and the patient carefully observed until the swelling disappears. In instances where swelling has been confined to the face and lips, the condition has generally resolved without treatment, although antihistamines have been useful in relieving symptoms. Angioedema associated with laryngeal edema may be fatal. **Where there is involvement of the tongue, glottis, or larynx likely to cause airway obstruction, appropriate therapy, e.g., subcutaneous epinephrine solution 1:1000 (0.3 mL to 0.5 mL), should be promptly administered.** (See ADVERSE REACTIONS.)

Hypotension: Excessive hypotension is rare in uncomplicated hypertensive patients treated with VASOTEC alone. Heart failure patients given VASOTEC commonly have some reduction in blood pressure, especially with the first dose, but discontinuation of therapy for continuing symptomatic hypotension usually is not necessary when dosing instructions are followed, caution should be observed when initiating therapy (See DOSAGE AND ADMINISTRATION.) Patients at risk for excessive hypotension, sometimes associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death, include those with the following conditions or characteristics: heart failure, hyponatremia, high-dose diuretic therapy, recent intensive diuresis or increase in diuretic dose, renal dialysis, or severe volume and/or salt depletion of any etiology. It may be advisable to eliminate the diuretic (except in heart failure patients), reduce the diuretic dose, or increase salt intake cautiously before initiating therapy with VASOTEC in patients at risk for excessive hypotension who are able to tolerate such adjustments. (See PRECAUTIONS, *Drug Interactions* and ADVERSE REACTIONS.) In patients at risk for excessive hypotension, therapy should be started under very close medical supervision and such patients should be followed closely for the first two weeks of treatment and whenever the dose of enalapril and/or diuretic is increased. Similar considerations may apply to patients with ischemic heart disease or cardiovascular disease in whom an excessive fall in blood pressure could result in a myocardial infarction or cerebrovascular accident. If excessive hypotension occurs, the patient should be placed in supine position and, if necessary, receive an intravenous infusion of normal saline. A transient hypotensive response is not a contraindication to further doses of VASOTEC, which usually can be given without difficulty once the blood pressure has stabilized. If symptomatic hypotension develops, a dose reduction or discontinuation of VASOTEC or concomitant diuretic may be necessary.

Neutropenia/Agranulocytosis: Another ACE inhibitor, captopril, has been shown to cause agranulocytosis and bone marrow depression, rarely in uncomplicated patients but more frequently in patients with renal impairment, especially if they also have a collagen vascular disease. Available data from clinical trials of enalapril are insufficient to show that enalapril does not cause agranulocytosis at similar rates. Foreign marketing experience has revealed several cases of neutropenia or agranulocytosis in which a causal relationship to enalapril cannot be excluded. Periodic monitoring of white blood cell counts in patients with collagen vascular disease and renal disease should be considered.

Precautions: *General: Impaired Renal Function.* As a consequence of inhibiting the renin-angiotensin-aldosterone system, changes in renal function may be anticipated in susceptible individuals. In patients with severe heart failure whose renal function may depend on the activity of the renin-angiotensin-aldosterone system, treatment with ACE inhibitors, including VASOTEC, may be associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death.

In clinical studies in hypertensive patients with unilateral or bilateral renal artery stenosis, increases in blood urea nitrogen and serum creatinine were observed in 20% of patients. These increases were almost always reversible upon discontinuation of enalapril and/or diuretic therapy. In such patients, renal function should be monitored during the first few weeks of therapy.

Some patients with hypertension or heart failure with no apparent preexisting renal vascular disease have developed increases in blood urea and serum creatinine, usually minor and transient, especially when VASOTEC has been given concomitantly with a diuretic. This is more likely to occur in patients with preexisting renal impairment. Dosage reduction and/or discontinuation of the diuretic and/or VASOTEC may be required.

Evaluation of patients with hypertension or heart failure should always include assessment of renal function. (See DOSAGE AND ADMINISTRATION.)

Hyperkalemia: Elevated serum potassium (> 5.7 mEq/L) was observed in approximately 1% of hypertensive patients in clinical trials. In most cases these were isolated values which resolved despite continued therapy. Hyperkalemia was a cause of discontinuation of therapy in 0.28% of hypertensive patients. In clinical trials in heart failure, hyperkalemia was observed in 3.8% of patients, but was not a cause for discontinuation.

Risk factors for the development of hyperkalemia include renal insufficiency, diabetes mellitus, and the concomitant use of potassium-sparing diuretics, potassium supplements, and/or potassium-containing salt substitutes, which should be used cautiously, if at all, with VASOTEC. (See *Drug Interactions.*)

Surgery/Anesthesia. In patients undergoing major surgery or during anesthesia with agents that produce hypotension, enalapril may block angiotensin II formation secondary to compensatory renin release. If hypotension occurs and is considered to be due to this mechanism, it can be corrected by volume expansion.

Information for Patients.

Angioedema. Angioedema, including laryngeal edema, may occur especially following the first dose of enalapril. Patients should be so advised and told to report immediately any signs or symptoms suggesting angioedema (swelling of face, extremities, eyes, lips, tongue, difficulty in swallowing or breathing) and to take no more drug until they have consulted with the prescribing physician.

Hypotension. Patients should be cautioned to report lightheadedness especially during the first few days of therapy. If actual syncope occurs, the patients should be told to discontinue the drug until they have consulted with the prescribing physician.

All patients should be cautioned that excessive perspiration and dehydration may lead to an excessive fall in blood pressure because of reduction in fluid volume. Other causes of volume depletion such as vomiting or diarrhea may also lead to a fall in blood pressure; patients should be advised to consult with the physician.

Hyperkalemia. Patients should be told not to use salt substitutes containing potassium without consulting their physician.

Neutropenia. Patients should be told to report promptly any indication of infection (e.g., sore throat, fever) which may be a sign of neutropenia.

NOTE: As with many other drugs, certain advice to patients being treated with enalapril is warranted. This information is intended to aid in the safe and effective use of this medication. It is not a disclosure of all possible adverse or intended effects.

Drug Interactions.

Hypotension. Patients on Diuretic Therapy: Patients on diuretics and especially those in whom diuretic therapy was recently instituted may occasionally experience an excessive reduction of blood pressure after initiation of therapy with enalapril. The possibility of hypotensive effects with enalapril can be minimized by either discontinuing the diuretic or increasing the salt intake prior to initiation of treatment with enalapril. If it is necessary to continue the diuretic, provide close medical supervision after the initial dose for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and DOSAGE AND ADMINISTRATION.)

Agents Causing Renin Release. The antihypertensive effect of VASOTEC is augmented by antihypertensive agents that cause renin release (e.g., diuretics).

Other Cardiovascular Agents. VASOTEC has been used concomitantly with beta-adrenergic-blocking agents, methyldopa, nitrates, calcium-blocking agents, hydralazine, prazosin, and digoxin without evidence of clinically significant adverse interactions.

Agents Increasing Serum Potassium: VASOTEC attenuates potassium loss caused by thiazide-type diuretics. Potassium-sparing diuretics (e.g., spironolactone, triamterene, or amiloride), potassium supplements, or potassium-containing salt substitutes may lead to significant increases in serum potassium. Therefore, if concomitant use of these agents is indicated because of demonstrated hypokalemia, they should be used with caution and with frequent monitoring of serum potassium. Potassium-sparing agents should generally not be used in patients with heart failure receiving VASOTEC.

Lithium. A few cases of lithium toxicity have been reported in patients receiving concomitant VASOTEC and lithium and were reversible upon discontinuation of both drugs. Although a causal relationship has not been established, it is recommended that caution be exercised when lithium is used concomitantly with VASOTEC and serum lithium levels should be monitored frequently.

Pregnancy—Category C: There was no fetotoxicity or teratogenicity in rats treated with up to 200 mg/kg/day of enalapril (333 times the maximum human dose). Fetotoxicity, expressed as a decrease in average fetal weight, occurred in rats given 1200 mg/kg/day of enalapril but did not occur when these animals were supplemented with saline. Enalapril was not teratogenic in rabbits. However, maternal and fetal toxicity occurred in some rabbits at doses of 1 mg/kg/day or more. Saline supplementation prevented the maternal and fetal toxicity seen at doses of 3 and 10 mg/kg/day, but not at 30 mg/kg/day (50 times the maximum human dose).

Radioactivity was found to cross the placenta following administration of labeled enalapril to pregnant hamsters.

There are no adequate and well-controlled studies of enalapril in pregnant women. However, data are available that show enalapril crosses the human placenta. Because the risk of fetal toxicity with the use of ACE inhibitors has not been clearly defined, VASOTEC® (Enalapril Maleate, MSD) should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Postmarketing experience with all ACE inhibitors thus far suggests the following with regard to pregnancy outcome. Inadvertent exposure limited to the first trimester of pregnancy has not been reported to affect fetal outcome adversely. Fetal exposure during the second and third trimesters of pregnancy has been associated with fetal and neonatal morbidity and mortality.

When ACE inhibitors are used during the later stages of pregnancy, there have been reports of hypotension and decreased renal perfusion in the newborn. Oligohydramnios in the mother has also been reported, presumably representing decreased renal function in the fetus. Infants exposed *in utero* to ACE inhibitors should be closely observed for hypotension, oliguria, and hyperkalemia. If oliguria occurs, attention should be directed toward support of blood pressure and renal perfusion with the administration of fluids and pressors as appropriate. Problems associated with prematurity such as patent ductus arteriosus have occurred in association with maternal use of ACE inhibitors, but it is not clear whether they are related to ACE inhibition, maternal hypertension, or the underlying prematurity.

Nursing Mothers: Milk in lactating rats contains radioactivity following administration of ^{14}C enalapril maleate. It is not known whether this drug is secreted in human milk. Because many drugs are secreted in human milk, caution should be exercised when VASOTEC is given to a nursing mother.

Pediatric Use. Safety and effectiveness in children have not been established.

Adverse Reactions: VASOTEC has been evaluated for safety in more than 10,000 patients, including over 1000 patients treated for one year or more. VASOTEC has been found to be generally well tolerated in controlled clinical trials involving 2987 patients.

HYPERTENSION: The most frequent clinical adverse experiences in controlled trials were: headache (5.2%), dizziness (4.3%), and fatigue (3%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in controlled clinical trials were: diarrhea (1.4%), nausea (1.4%), rash (1.4%), cough (1.3%), orthostatic effects (1.2%), and asthenia (1.1%).

HEART FAILURE. The most frequent clinical adverse experiences in both controlled and uncontrolled trials were: dizziness (7.9%), hypotension (6.7%), orthostatic effects (2.2%), syncope (2.2%), cough (2.2%), chest pain (2.1%), and diarrhea (2.1%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in both controlled and uncontrolled clinical trials were: fatigue (1.8%), headache (1.8%), abdominal pain (1.6%), asthenia (1.6%), orthostatic hypotension (1.6%), vertigo (1.6%), angina pectoris (1.5%), nausea (1.3%), vomiting (1.3%), bronchitis (1.3%), dyspnea (1.3%), urinary tract infection (1.3%), rash (1.3%), and myocardial infarction (1.2%).

Other serious clinical adverse experiences occurring since the drug was marketed or adverse experiences occurring in 0.5% to 1% of patients with hypertension or heart failure in clinical trials in order of decreasing severity within each category:

Cardiovascular. Cardiac arrest, myocardial infarction or cerebrovascular accident, possibly secondary to excessive hypotension in high-risk patients (see WARNINGS, *Hypotension*), cardiac arrest, pulmonary embolism and infarction, rhythm disturbances; atrial fibrillation, palpitation.

Digestive. Ileus, pancreatitis, hepatitis or cholestatic jaundice, melena, anorexia, dyspepsia, constipation, glossitis.

Nervous/Psychiatric: Depression, confusion, ataxia, somnolence, insomnia, nervousness, paresthesia.

Urogenital. Renal failure, oliguria, renal dysfunction (see PRECAUTIONS and DOSAGE AND ADMINISTRATION).

Respiratory. Bronchospasm, rhinorrhea, asthma, upper respiratory infection.

Skin: Herpes zoster, pruritus, alopecia, flushing, photosensitivity.

Other. Vasculitis, muscle cramps, hyperhidrosis, impotence, blurred vision, taste alteration, tinnitus.

A symptom complex has been reported which may include fever, myalgia, and arthralgia; an elevated erythrocyte sedimentation rate may be present. Rash or other dermatologic manifestations may occur. These symptoms have disappeared after discontinuation of therapy.

Angioedema. Angioedema has been reported in patients receiving VASOTEC (0.2%). Angioedema associated with laryngeal edema may be fatal. If angioedema of the face, extremities, lips, tongue, glottis, and/or larynx occurs, treatment with VASOTEC should be discontinued and appropriate therapy instituted immediately. (See WARNINGS.)

Hypotension: In the hypertensive patients, hypotension occurred in 0.9% and syncope occurred in 0.5% of patients following the initial dose or during extended therapy. Hypotension or syncope was a cause for discontinuation of therapy in 0.1% of hypertensive patients. In heart failure patients, hypotension occurred in 6.7% and syncope occurred in 2.2% of patients. Hypotension or syncope was a cause for discontinuation of therapy in 1.9% of patients with heart failure. (See WARNINGS.)

Clinical Laboratory Test Findings.

Serum Electrolytes: Hyperkalemia (see PRECAUTIONS), hyponatremia.

Creatinine, Blood Urea Nitrogen. In controlled clinical trials, minor increases in blood urea nitrogen and serum creatinine, reversible upon discontinuation of therapy, were observed in about 0.2% of patients with essential hypertension treated with VASOTEC alone. Increases are more likely to occur in patients receiving concomitant diuretics or in patients with renal artery stenosis. (See PRECAUTIONS.) In patients with heart failure who were also receiving diuretics with or without digitalis, increases in blood urea nitrogen or serum creatinine, usually reversible upon discontinuation of VASOTEC and/or other concomitant diuretic therapy, were observed in about 11% of patients. Increases in blood urea nitrogen or creatinine were a cause for discontinuation in 1.2% of patients.

Hemoglobin and Hematocrit: Small decreases in hemoglobin and hematocrit (mean decreases of approximately 0.3 g% and 1.0 vol %, respectively) occur frequently in either hypertension or heart failure patients treated with VASOTEC but are rarely of clinical importance unless another cause of anemia coexists. In clinical trials, less than 0.1% of patients discontinued therapy due to anemia.

Other (Causal Relationship Unknown): In marketing experience, rare cases of neutropenia, thrombocytopenia, and bone marrow depression have been reported.

Liver Function Tests: Elevations of liver enzymes and/or serum bilirubin have occurred.

Dosage and Administration: *Hypertension.* In patients who are currently being treated with a diuretic, symptomatic hypotension occasionally may occur following the initial dose of VASOTEC. The diuretic should, if possible, be discontinued for two to three days before beginning therapy with VASOTEC to reduce the likelihood of hypotension. (See WARNINGS.) If the patient's blood pressure is not controlled with VASOTEC alone, diuretic therapy may be resumed.

If the diuretic cannot be discontinued, an initial dose of 2.5 mg should be used under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions.*)

The recommended initial dose in patients not on diuretics is 5 mg once a day. Dosage should be adjusted according to blood pressure response. The usual dosage range is 10 to 40 mg per day administered in a single dose or in two divided doses. In some patients treated once daily, the antihypertensive effect may diminish toward the end of the dosing interval. In such patients, an increase in dosage or twice-daily administration should be considered. If blood pressure is not controlled with VASOTEC alone, a diuretic may be added.

Concomitant administration of VASOTEC with potassium supplements, potassium salt substitutes, or potassium-sparing diuretics may lead to increases of serum potassium (see PRECAUTIONS).

Dosage Adjustment in Hypertensive Patients with Renal Impairment. The usual dose of enalapril is recommended for patients with a creatinine clearance >30 mL/min (serum creatinine of up to approximately 3 mg/dL). For patients with creatinine clearance ≤30 mL/min (serum creatinine ≥3 mg/dL), the first dose is 2.5 mg once daily. The dosage may be titrated upward until blood pressure is controlled or to a maximum of 40 mg daily.

Heart Failure. VASOTEC is indicated as adjunctive therapy with diuretics and digitalis. The recommended starting dose is 2.5 mg once or twice daily. After the initial dose of VASOTEC, the patient should be observed under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions.*) If possible, the dose of the diuretic should be reduced, which may diminish the likelihood of hypotension. The appearance of hypotension after the initial dose of VASOTEC does not preclude subsequent careful dose titration with the drug, following effective management of the hypotension. The usual therapeutic dosing range for the treatment of heart failure is 5 to 20 mg daily given in two divided doses. The maximum daily dose is 40 mg. Once-daily dosing has been effective in a controlled study, but nearly all patients in this study were given 40 mg, the maximum recommended daily dose, and there has been much more experience with twice-daily dosing. In addition, in a placebo-controlled study which demonstrated reduced mortality in patients with severe heart failure (NYHA Class IV), patients were treated with 2.5 to 40 mg per day of VASOTEC, almost always administered in two divided doses. (See CLINICAL PHARMACOLOGY, *Pharmacodynamics and Clinical Effects.*) Dosage may be adjusted depending upon clinical or hemodynamic response. (See WARNINGS.)

Dosage Adjustment in Heart Failure Patients with Renal Impairment or Hyponatremia: In heart failure patients with hyponatremia (serum sodium <130 mEq/L) or with serum creatinine >1.6 mg/dL, therapy should be initiated at 2.5 mg daily under close medical supervision. (See DOSAGE AND ADMINISTRATION, *Heart Failure,* WARNINGS, and PRECAUTIONS, *Drug Interactions.*) The dose may be increased to 2.5 mg b.i.d., then 5 mg b.i.d. and higher as needed, usually at intervals of four days or more, if at the time of dosage adjustment there is not excessive hypotension or significant deterioration of renal function. The maximum daily dose is 40 mg.

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The 44th anniversary

The American Medical Association, through its organ, JAMA, invariably commemorates annually the atom bombing of Hiroshima and Nagasaki in early August of 1945, by publishing articles and editorializing in its August issues, on what the release of the genie of atomic fission and fusion means in terms of the potential for the destruction of the human race, and perhaps all life on planet Earth. We at the JOURNAL of the Hawaii Medical Association, might well consider that example — at least to a small degree. After all, JAMA's home is in the center of the continental Mainland; Hawaii is now a State, one of 50 states in the USA, but far removed from the Mainland and much nearer to Hiroshima, and far out in the broad Pacific Ocean.

It is pretty well accepted that President Harry Truman's anguished decision to drop the bombs — the first and the only two bombs dropped in anger so far — did bring World War II to a sudden halt. There is continuing debate over whether the reason for the decision was to save inevitable massive casualties on both sides, had the invasion of Japan proceeded, or whether it was made primarily to warn off the invading Soviets under Stalin. Probably it was a mixture of both. The debate is academic at this point.

What is indeed troubling to world political scientists is where have we and the Soviets gone from there, and where do we go from here. As PSR's past president, Victor Sidel, MD, told audiences in Honolulu and Kauai recently, the destruction of our environment, the deterioration of our social structures and the subtle damage to persons exposed to the making and the testing of nuclear weapons has continued for 44 years, all the while the accumulation of stockpiles of these potentially lethal instruments goes on and on unabated.

We recently had an opportunity (a rarity) to read a book. It is a thin paperback titled *Nuclear Playground,* by Professor Stewart Firth, visiting at the University of Hawaii from his native Australia. The book is a masterful documentary of the nuclear age in the Pacific; it certainly should be a history text for the generations born since the beginning of World War II, a great many members of which know almost nothing about what has transpired this past half century. We quote what struck us as salient points of comment:

> "War will remain for as long as the world consists of sovereign states, each arming against its enemies; and nuclear war will remain a possibility for as long as sovereign states possess nuclear weapons. . . .
>
> "(Former ambassador) George Kennan now concludes: '. . . no hope, no fear, nothing to which we aspire, nothing we would like to avoid, nothing which could conceivably be worth a nuclear war is an issue between the USA and the USSR'. . . .
>
> "The history of the South Pacific since 1946 suggests that, for as long as the region stays in the nuclear web of the United States and of France, the safety of its people will be endangered."

J.I. Frederick Reppun, MD
Editor

What is "Medical Care"?

It is *not* "Health Care."

Medical care — or the practice of medicine by physicians — is the care, the succor, the amelioration, and even the prevention of the ravages on the human body and mind of illness, injury and debilitating degeneration. These are, one might say, the affects from external sources, but medicine can and should also treat the ravages of self-abuse, and of abuses engendered by society.

Health, its maintenance and care, on the other hand, is a person's own business. She/he — we much prefer the generic he — either looks after his own health properly, or he abuses his own body and mind in various, multitudinous ways. Much of these ways are under his own control and volition. If ill health occurs, even as a consequence of self-abuse, and of course if it is the result of circumstances beyond his volition or control, then he goes to seek medical care. The support and preservation of one's own health, however, does not and should not come under the purview of medical doctors (to call them "health-care providers" is a distasteful anachronism!).

Medicine — the practitioners of, by those specifically educated and trained in its art and techniques — MEDI- ►

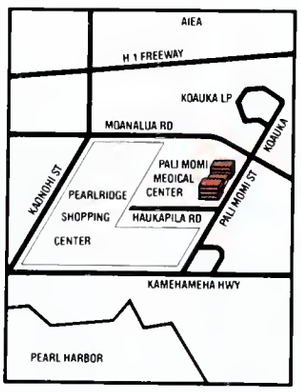
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CINE knows when an untreatable or incurable affliction exists in a person or persons, or is about to become epidemic in a society. The disciples of Apollo — these physicians — can and should, then, direct their full attention to its prevention. This means entering the field of Public Health and its political arena.

However, here the knowledgeable, treating physician should donate his unique expertise to assist the efforts of the many other workers in the realm of preserving the health of society and its environment; he does not tread where others more accustomed to the turf are expert at effecting remedies. The physician becomes an educator in things medical. One does not have to be an MD in order to qualify for the degree of MPH, but the professionals in the field of public health cannot function efficiently without the input of the professionals in medicine. The latter know "the patient" better.

There is no question that the public's health is a direct concern of physicians, basically because it impinges on the health of the individual components of human society — our patients. "Public Health" can be considered as synonymous with "preventive medicine." When medical practitioners come to the realization that an epidemic may throw people into a state of illness, injury or premature death, through no fault of their own, the physicians do need to get involved in preventive medicine, i.e. into the public health field. If physicians are fully aware that smoking can cause myocardial infarction, gangrene of the extremities, cancer of the bladder, breast, lips, tongue, throat and lungs, for example — the treatment offered the victims thereof being futile — then medical doctors may and should enter the field of preventive medicine, i.e. public health. This is not, in any way, the same as getting involved in so-called "health care" of the individual person, except in that the physician can participate as an educator, when his expertise is solicited. His exhortation against smoking must be respected.

Having put the "health-care provider" to rest in his grave, hopefully, we can now resurrect the physician — Aesculapius — the highly intelligent, the well-educated, the specifically trained, the humanly compassionate doctor of medicine, who knows whereof he speaks when he says nuclear weapons for the purposes of nuclear war are no longer a military option for the resolution of international conflicts, but are genocidal and suicidal implements. They will cause human casualties totally beyond the capacity of the medical care system to address. "Health care," in the event of such a holocaust, in the language of the bureaucrats, will be as extinct as the bureaucrats themselves!

J.I. Frederick Reppun, MD
Editor



Another excellent issue of the HMJ (May '89) — congratulations and encomiums! Your concise and forceful editorial on Dr. Katz's excellent paper was right *on!* And on the stingray report, as well. I was delighted that you were able to give Henry Yokoyama 4½ pages of space for his entertaining and informative prose — and as I told him, I wouldn't have bluepencilled *one* of his jokes.

The eighth edition of *Andrews' Diseases of the Skin* is due out in November, and I commend it to your attention (I'll request a review copy for you). It is astonishing to see the many changes and the many advances in 10 years.

I was impressed by the reprint of Russell Stodd's column from "The Weathervane." Very good stuff, and well written! I told Dan Inouye many many years ago that what we most needed in the Congress was a few men capable of saying "That would be very nice, but we just can't afford it." Of course you *can* afford it if you aren't going to pay for it anyway!

I suffer pangs of nostalgia for a few days after every issue of the HMJ arrives — but it's worth it!

Aloha pumehana!
Harry L. Arnold Jr., MD
Editor emeritus
San Francisco

Right on, Dr. Reppun! Your objection to the Attestation requirement (HMJ editorial, June 1989) is well stated and important. Hospital administrators and comptrollers are not asked to sign such a form. Certainly, neither HCFA administrators nor politicians sign such forms. Those forms are designed purely to insult and provoke physicians.

Now that I know that this is not a law but is only a bureaucratic regulation, I will no longer sign.

This has always reminded me of the loyalty oath required when I was a resident of a VA Hospital in the late 1960s. I didn't sign that one either.

Thanks for your editorial.

Barry Blum, MD
Kealakekua, Hawaii

HMA Committee Reports

New mandated reporting requirements for physicians: Environmentally induced illness and injury

The Hawaii Medical Association, in cooperation with the Hawaii State Department of Health, will be attempting to educate all primary-care physicians in the State of Hawaii on the recognition and management of certain environmentally induced illnesses.

While the knowledge of such illnesses is generally important for the primary-care physician, a recent law passed by the Legislature mandates that a certain number of these illnesses be reported in a timely fashion by both physicians and laboratories, to the Department of Health. Hawaii Administrative Rules II-XXX require that physicians report any case of heavy-metal poisoning within one day of lab confirmation, and pesticide (carbamate and organophosphate) exposures within one day of diagnosis.

Prior to the full implementation of the new regulations, there will be a period of physician-education in the area of environmental illness and injury-recognition and management. This is to be undertaken in several ways over the next several months. The Hawaii Medical Association will organize an Environmental Speakers Bureau consisting of a core group of physicians knowledgeable in the subject matter. These physicians will be trained during a half-day session in Honolulu by a clinical specialist in environmental illness. These physicians will then be capable of training other primary-care practitioners. Plans are being made to provide course material and visual teaching aids for these sessions and to provide CME Category I credit through the HMA.

The various HMA publications will carry articles, case reports, and bulletins for the physicians. These materials will be clinical in nature and will supplement Department of Health material.

The current reporting requirement is appropriately limited in scope to those environmental illnesses that can be diagnosed using laboratory tests. This limitation makes the physician's responsibility less onerous and provides an ample period of time to allow physicians to become familiar with these environmental illnesses prior to expanding the list in the future to less easily diagnosed diseases. However, physicians will be urged to report all clinically diagnosed environmental illnesses to the Department of Health, although not mandated to do so.

More information on the final form of this regulation and its implementation will be forthcoming in the near future. Physicians wanting to know more about becoming presenters for the Environmental Speakers Bureau should contact Karen Hamada at the HMA office.

Steven M. Moser, MD
Chairman, Toxic Agents Committee



Continuing Medical Education

The Hawaii Medical Association does not review or evaluate the programs listed in the Hawaii Medical Journal Continuing Medical Education column and assumes no responsibility for educational value, scientific content, changes in agenda or cancellation.

CALENDAR OF ACCREDITED EVENTS—CATEGORY 1

Accredited Programs of CME allow one unit of AMA credit for each hour of instruction excluding all "breaks." Some programs also are accredited for AAFP prescribed credit.

LOCAL ACCREDITED PROGRAMS

ONGOING

For a complete list of ongoing programs, please refer to the May 1989 edition of the HAWAII MEDICAL JOURNAL. Further information is available through the individual institutions or through the HMA's CME Department.

SPECIAL EVENTS

All special events should be confirmed with the CME program sponsors, as cancellations are not necessarily reported to the HAWAII MEDICAL JOURNAL.

►



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AUGUST

8/05-8/12

Fine Needle Biopsy Course. Contact Robert Maggio, Extended Programs in Medical Education, School of Medicine, University of California, San Francisco, CA 94143, 415-476-4251.

8/13-8/18

Hawaiian Seminar on Clinical Anesthesia. Contact: CSA, 1065 E. Hillsdale Blvd., Ste. 410, Foster City 94404, 415-345-3020. Location: Sheraton Kauai Hotel, Kauai.

8/13-8/23

USC 32nd Annual Postgraduate Refresher Course. Contact: USC, School of Medicine, Postgraduate Division, 1975 Zonal Avenue, Los Angeles, CA 90033, 800-421-6729; within CA 800-321-1929. Location: Westin Maui, Maui & Hyatt Waikoloa, Big Island of Hawaii.

8/20-8/23

Third International Symposium on Lipofuscin and Ceroid Pigments - 1989: State of the Art. Contact: E.A. Porta, M.D., Department of Pathology, School of Medicine, University of Hawaii, 1960 East-West Road, Honolulu, HI 96822. Location: Stouffer Wailea Beach Resort, Maui.

SEPTEMBER

9/30-10/04

International Conference on Bioenergetic Medicine - Past, Present and Future. Contact: Continuing Medical Education, John A. Burns School of Medicine, University of Hawaii, 1960 East-West Road, Honolulu, HI 96822, 808-948-6949. Location: East-West Center, Honolulu.

OCTOBER

10/11-10/14

Hip and Knee Reconstructive Surgery 1989. UCLA at Sheraton Kauai Hotel Poipu Beach, Kauai. Wed.-Sat. Contact: UCLA. (213) 825-5840.

10/14-10/21

New Approaches to the Evaluation of Neoplastic Lymphoproliferative Disorders, USC School of Medicine University Pathology Associates. Contact: University Pathology Associates, Inc., Department of Pathology, USC School of Medicine, 2025 Zonal Avenue, Los Angeles, CA 90033. Location: Wailea Beach Resort, Maui.

10/14-10/21

Fourteenth Annual International Body Imaging Conference. Contact: Body Imaging Conference, 9800 D. Topanga Canyon Blvd., Suite 232, Chatsworth, CA 91311, 818-700-9821. Location: Hyatt Regency Waikoloa, Big Island of Hawaii.

10/31-11/03

Therapeutic Hotline. Contact: Paul H. Jacobs, MD, Dept. of Dermatology, Rm. R-144, Stanford, CA 94305, 415-723-7854. Location: Molokai.

NOVEMBER

11/02-11/07

The ACP-UH MKSAP VIII Review Course. Contact: Irwin J. Schatz, M.D., Professor & Chairman, Department of Medicine, John A. Burns School of Medicine, 1960 East-West Road, Honolulu, HI 96822, 808-548-2810. Location: Stouffers Wailea, Maui.

11/07-11/14

Annual Clinical Meeting, District I, The American College of OB-GYN. Contact: Colpitts Medical Meeting Planners, 450 Providence Highway, Dedham/Boston, MA 02026-6868, 1-800-972-7777; 617-326-7800. Location: Maui and Kauai.

11/10-11/12

Hawaii Section ACOG Annual Educational Meeting. Contact: Robyn Izumi, 1319 Punahou St., #816, Honolulu, HI 96826, 808-948-6949. Location: Stouffer Waiohai Beach Resort, Kauai.

11/10-11/12

133rd Hawaii Medical Association Annual Scientific Meeting. Contact: Jennie Asato, 1360 South Beretania St., Honolulu, HI 96814, 808-536-7702. Location: Westin Maui, Maui.

DECEMBER

12/24-12/30

Advances in Medicine '89. Symposia Maui, Inc. and co-sponsored by the Hawaii Medical Association. Contact: Paula Harrison, Symposia Maui, Inc., P.O. Box 833, Makawao, Maui, 96768, 808-878-6757. Location: Royal Lahaina Resort, Maui.

1990

JANUARY

1/22-1/26

8th Annual Hawaii Conference on Gastrointestinal and Hepatic Diseases. The Honolulu Medical Group Research & Education Foundation and co-sponsored by the Hawaii Medical Association. Contact: Gary Glober, M.D., 1380 Lusitana St., Suite 701, Honolulu, HI 96813, 808-536-1021. Location: Hyatt Waikoloa, Big Island of Hawaii.

FEBRUARY

2/19-2/23

Hawaii 1990: 5th Annual Advances in Primary Care Medicine. Pacific Institute of Continuing Medical Education and co-sponsored by the Hawaii Medical Association. Contact: Valerie Murray, P.O. Box 1059, Koloa, HI 969756, 808-742-7471. Location: Stouffer Waiohai, Kauai.

2/19-2/23

Current Problems in Cardiology Diseases. William L. Nietz, Division of Education, Mayo Clinic, Rochester, MN 55905, 507-284-2085. Location: Maui Marriott, Maui.



Reader's Express Their Views

"You start by giving your hat, then you give your coat, then your shirt, then your skin, and finally your soul."

The AMA House of Delegates met June 18-22 in Chicago, and a mighty effort was made to bring some order out of the current status of the PPRC and the RBRVS. The separation of the body of medicine actually began in the early 1980s, when the American Society of Internal Medicine and allies began to push for a restructure of medical reimbursement. Their valid argument was that "procedurists" were able to make considerably more money in medicine because of the peculiar mechanism of paying more per unit work for surgeries, tests, measurements, scopings, etc. The doctor who merely examined the patient and reflected upon the probabilities was likely to earn considerably less for his efforts. After years of contention the PPRC with its stepchild the RBRVS were born in the minds of Congress. All of this is now leading to a federally mandated restructure of Medicare/Medicaid reimbursement, which will surely be assumed by the private carriers as well. The first group to abandon ship were the radiologists, who wrote their own RVS, considerably removed from the Hsiao study. Then, the American College of Surgeons completely ignored the AMA and the Hsiao people, to write their own schedule. Additionally, the Congressional committee has listened to the psychiatrist-psychologist battle and the ophthalmologist-optometrist argument over post-op care. The result has been that Congress is saddled with sorting out a sometimes vicious collection of voices all claiming the right to appropriate respect and reimbursement within the federal budget. The most sensitive nerve in the body is the wallet receptor — nothing is more likely to divide doctors and so make them vulnerable to control. As Donald Sanders, MD, points out in his editorial in OSN, "to expect unity here is wishing for Camelot." Or, perhaps like leaving the porch light on for Jimmy Hoffa. Or waiting for Sly Stallone to win an Oscar. Stay tuned — the HOS will have bodies in Chicago.

"I thought that YAG meant "your assets are gone."

A few years ago when radial keratotomy was introduced to the ophthalmologic scene, a scholarly statement was offered that RK would not become a widely accepted procedure because there was no product involved, no device to sell. The logic can hardly be challenged. Consider the push for phaco systems, foldable lenses, laser procedures, even high-priced UV protective sun glasses. When a manufacturer's device is stirred in, the marketing pressure immediately comes to bear with glossy ads, physician instruction courses, reports in lay magazines, testimonials, etc. One can see on the horizon expensive devices for refractive surgery with the sudden rediscovery of nearsightedness — a dreaded optical condition afflicting millions of otherwise healthy Americans!"

And the surgical herd will rush out to buy the latest buzzing, whirling, cutting, cryo-micro-kerato-fractionator, while the manufacturer's cash register rings.

"You can always tell a Harvard man, but you can't tell him much."

After 50-plus years in Congress, Harvard Law graduate Claude Pepper of Florida has expired as a result of cancer. He was 88 years old, and still serving his constituents. Because of his constant advocacy of any and all issues pertaining to the elderly, he was sometimes called the Congressman from AARP or the Representative from SSA. In 1965 when Medicare was introduced by LBJ's Congress, 35% of the elderly were at or below the poverty level, but in 1987 the percentage had been reduced to 16%. In simple terms that means that struggling younger working people are being taxed at an increasing rate to support a smaller percent of needy elderly. A means test is clearly the answer, but Congress (led by Rep. Pepper) has consistently refused to even discuss that suggestion. Congressman Pepper at age 88 with 50 years of service to his credit was about due to retire one way or another. Possibly his death means that he will not be re-elected.

"Wine is a mocker; strong drink is raging."

A federal jury recently returned a verdict against a woman and her husband who sued Jim Beam Brands Co., claiming it was liable for the fact that she gave birth to a deformed baby after drinking half a fifth a day during her pregnancy, because there was no warning label on the bottle. The jury's decision suggests there may be limits to the idea that society has to be protected from every risk that entrepreneurial trial lawyers can concoct for their clients.

HOW COME?

- In a study in the United Kingdom, 20% of 10-year-old children with prescribed eyeglasses had normal vision.
- In the USA, a study of children aged 10-16 revealed that those who play a wind instrument were three times more likely to have decreased accommodation.
- In seven cases of severe, gram-neg microbial keratitis, all were associated with timolol.

AND REMEMBER —

Once you open a can of worms, the only way to recan them is to use a larger can.

No matter what goes wrong, there is always somebody who knew it would.

A merry heart doeth good like a medicine.

ALOHA and keep the faith —

Russell T. Stodd, MD
From "The Weathervane"
Vol. 6, No. 6, June 1989

Clinical Pathologist's Easy Chair

FRANCIS H. FUKUNAGA, MD

Delta Bilirubin

Bilirubin has traditionally been considered either "direct" or "indirect" bilirubin. Direct bilirubin is the fraction that reacts immediately (or directly) with the diazo reagent while the indirect bilirubin is first treated with an accelerator reagent to promote diazotization. The breakdown of hemoglobin in the reticuloendothelial system is the main source of bilirubin. This bilirubin is insoluble in water and is transported by albumin to the liver, where it is esterified with glucuronic acid to yield bilirubin monoglucuronide and diglucuronide. Direct bilirubin corresponds to *most* of these conjugated bilirubins.

Chromatographic studies have shown another bilirubin, delta bilirubin, in jaundiced adults. It is bound covalently to albumin and is found only in patients with hepatocellular or obstructive jaundice[1]. Delta bilirubin formation requires an intact ability for glucuronidation along with an impaired excretion of the bilirubin. It does not accumulate in severe liver failure and is almost absent in patients with deficient conjugating ability such as Gilbert's syndrome and in neonates[2]. Delta bilirubin may constitute about 20% to 30% of the total bilirubin but it may increase to 50% to 90% during recovery. This fraction increases because the kidneys are not able to excrete it as well as conjugated bilirubin. This slower urinary clearance of delta bilirubin during recovery from jaundice explains the disappearance of the bilirubin in urine despite persistence of hyperbilirubinemia. A low or decrease of delta bilirubin may be a sign of poor prognosis in cases of severe hepatic disease[3].

The conventional diazo method for direct bilirubin measures the conjugated bilirubin plus the delta bilirubin. HPLC studies have shown that these direct bilirubin methods underestimate the conjugated bilirubin, there is a negative interference by hemoglobin and a positive bias by the unconjugated bilirubin. Direct bilirubin values vary from lab to lab depending upon the methodology and reaction conditions. The indirect bilirubin (TBil - DBil) is usually overestimated due to the bias caused by the analytical deficiencies of the direct bilirubin methods.

Conjugated bilirubin (Bc) increases earlier than delta bilirubin in developing cholestasis and returns to normal faster with resolution of the cholestasis. The Bc levels also decrease faster than the total and direct bilirubin by the conventional diazo methods and the alkaline phosphatase when the biliary obstruction is relieved. This decrease of Bc appears to be the earliest indicator of restoration of biliary excretory function[4].

An analyzer system that uses multilayered films or slides to measure total bilirubin and its major fractions correlates well with the HPLC methods[5]. Two slides are used, one to measure total bilirubin (TBil), and the other to measure both unconjugated bilirubin (Bu) and conjugated bilirubin (Bc) at separate wave lengths. Delta bilirubin (Bd) can be calculated from the two results, since:

$$TBil = Bu + Bc + Bd$$
$$Bd = TBil - Bu - Bc \text{ and}$$
$$DBil = TBil - Bu = Bc + Bd$$

There are some drugs that interfere with the slide method for bilirubin including sulfasalazine, Pyridium, nitrofurantoin, methotrexate and Feldene, especially at high doses. Patients receiving these drugs typically show negative values for Bu. They also have Bc values greater than 0.3 mg/dl and frequently greater than the TBil. ■

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Brief Summary

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Indications and Usage: Axid is indicated for up to eight weeks for the treatment of active duodenal ulcer. In most patients, the ulcer will heal within four weeks.

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Contraindication: Axid is contraindicated in patients with known hypersensitivity to the drug and should be used with caution in patients with hypersensitivity to other H_2-receptor antagonists.

Precautions: *General* — 1. Symptomatic response to nizatidine therapy does not preclude the presence of gastric malignancy.

2. Because nizatidine is excreted primarily by the kidney, dosage should be reduced in patients with moderate to severe renal insufficiency.

3. Pharmacokinetic studies in patients with hepatorenal syndrome have not been done. Part of the dose of nizatidine is metabolized in the liver. In patients with normal renal function and uncomplicated hepatic dysfunction, the disposition of nizatidine is similar to that in normal subjects.

Laboratory Tests — False-positive tests for urobilinogen with Multistix® may occur during therapy with nizatidine.

Drug Interactions — No interactions have been observed between Axid and theophylline, chlordiazepoxide, lorazepam, lidocaine, phenytoin, and warfarin. Axid does not inhibit the cytochrome P-450-linked drug-metabolizing enzyme system, therefore, drug interactions mediated by inhibition of hepatic metabolism are not expected to occur. In patients given very high doses (3,900 mg) of aspirin daily, increases in serum salicylate levels were seen when nizatidine, 150 mg b.i.d., was administered concurrently.

Carcinogenesis, Mutagenesis, Impairment of Fertility — A two-year oral carcinogenicity study in rats with doses as high as 500 mg/kg/day (about 80 times the recommended daily therapeutic dose) showed no evidence of a carcinogenic effect. There was a dose-related increase in the density of enterochromaffin-like (ECL) cells in the gastric oxyntic mucosa. In a two-year study in mice, there was no evidence of a carcinogenic effect in male mice, although hyperplastic nodules of the liver were increased in the high-dose males as compared with placebo. Female mice given the high dose of Axid (2,000 mg/kg/day, about 330 times the human dose) showed marginally statistically significant increases in hepatic carcinoma and hepatic nodular hyperplasia with no numerical increase seen in any of the other dose groups. The rate of hepatic carcinoma in the high-dose animals was within the historical control limits seen for the strain of mice used. The female mice were given a dose larger than the maximum tolerated dose, as indicated by excessive (30%) weight decrement as compared with concurrent controls and evidence of mild liver injury (transaminase elevations). The occurrence of a marginal finding at high dose only in animals given an excessive and somewhat hepatotoxic dose, with no evidence of a carcinogenic effect in rats, male mice, and female mice (given up to 360 mg/kg/day, about 60 times the human dose), and a negative mutagenicity battery are not considered evidence of a carcinogenic potential for Axid.

Axid was not mutagenic in a battery of tests performed to evaluate its potential genetic toxicity, including bacterial mutation tests, unscheduled DNA synthesis, sister chromatid exchange, mouse lymphoma assay, chromosome aberration tests, and a micronucleus test.

In a two-generation, perinatal and postnatal fertility study in rats, doses of nizatidine up to 650 mg/kg/day produced no adverse effects on the reproductive performance of parental animals or their progeny.

Pregnancy — Teratogenic Effects — Pregnancy Category C — Oral reproduction studies in rats at doses up to 300 times the human dose and in Dutch Belted rabbits at doses up to 55 times the human dose revealed no evidence of impaired fertility or teratogenic effect; but, at a dose equivalent to 300 times the human dose, treated rabbits had abortions, decreased number of live fetuses, and depressed fetal weights. On intravenous administration to pregnant New Zealand White rabbits, nizatidine at 20 mg/kg produced cardiac enlargement, coarctation of the aortic arch, and cutaneous edema in one fetus and at 50 mg/kg it produced ventricular anomaly, distended abdomen, spina bifida, hydrocephaly, and enlarged heart in one fetus. There are, however, no adequate and well-controlled studies in pregnant women. It is also not known whether nizatidine can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Nizatidine should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers — Studies conducted in lactating women have shown that <0.1% of the administered oral dose of nizatidine is secreted in human milk in proportion to plasma concentrations. Caution should be exercised when administering nizatidine to a nursing mother.

Pediatric Use — Safety and effectiveness in children have not been established.

Use in Elderly Patients — Ulcer healing rates in elderly patients are similar to those in younger age groups. The incidence rates of adverse events and laboratory test abnormalities are also similar to those seen in other age groups. Age alone may not be an important factor in the disposition of nizatidine. Elderly patients may have reduced renal function.

Adverse Reactions: Clinical trials of nizatidine included almost 5,000 patients given nizatidine in studies of varying durations. Domestic placebo-controlled trials included over 1,900 patients given nizatidine and over 1,300 given placebo. Among reported adverse events in the domestic placebo-controlled trials, sweating (1% vs 0.2%), urticaria (0.5% vs < 0.01%), and somnolence (2.4% vs 1.3%) were significantly more common in the nizatidine group. A variety of less common events was also reported; it was not possible to determine whether these were caused by nizatidine.

Hepatic — Hepatocellular injury, evidenced by elevated liver enzyme tests (SGOT [AST], SGPT [ALT], or alkaline phosphatase), occurred in some patients and was possibly or probably related to nizatidine. In some cases, there was marked elevation of SGOT, SGPT enzymes (greater than 500 IU/L) and, in a single instance, SGPT was greater than 2,000 IU/L. The overall rate of occurrences of elevated liver enzymes and elevations to three times the upper limit of normal, however, did not significantly differ from the rate of liver enzyme abnormalities in placebo-treated patients. All abnormalities were reversible after discontinuation of Axid.

Cardiovascular — In clinical pharmacology studies, short episodes of asymptomatic ventricular tachycardia occurred in two individuals administered Axid and in three untreated subjects.

CNS — Rare cases of reversible mental confusion have been reported.

Endocrine — Clinical pharmacology studies and controlled clinical trials showed no evidence of antiandrogenic activity due to Axid. Impotence and decreased libido were reported with equal frequency by patients who received Axid and by those given placebo. Rare reports of gynecomastia occurred.

Hematologic — Fatal thrombocytopenia was reported in a patient who was treated with Axid and another H_2-receptor antagonist. On previous occasions, this patient had experienced thrombocytopenia while taking other drugs. Rare cases of thrombocytopenic purpura have been reported.

Integumental — Sweating and urticaria were reported significantly more frequently in nizatidine- than in placebo-treated patients. Rash and exfoliative dermatitis were also reported.

Hypersensitivity — As with other H_2-receptor antagonists, rare cases of anaphylaxis following administration of nizatidine have been reported. Because cross-sensitivity in this class of compounds has been observed, H_2-receptor antagonists should not be administered to individuals with a history of previous hypersensitivity to these agents. Rare episodes of hypersensitivity reactions (eg, bronchospasm, laryngeal edema, rash, and eosinophilia) have been reported.

Other — Hyperuricemia unassociated with gout or nephrolithiasis was reported. Eosinophilia, fever, and nausea related to nizatidine administration have been reported.

Overdosage: Overdoses of Axid have been reported rarely. The following is provided to serve as a guide should such an overdose be encountered.

Signs and Symptoms — There is little clinical experience with overdosage of Axid in humans. Test animals that received large doses of nizatidine have exhibited cholinergic-type effects, including lacrimation, salivation, emesis, miosis, and diarrhea. Single oral doses of 800 mg/kg in dogs and of 1,200 mg/kg in monkeys were not lethal. Intravenous median lethal doses in the rat and mouse were 301 mg/kg and 232 mg/kg respectively.

Treatment — To obtain up-to-date information about the treatment of overdose, a good resource is your certified regional Poison Control Center. Telephone numbers of certified poison control centers are listed in the *Physicians' Desk Reference (PDR)*. In managing overdosage, consider the possibility of multiple drug overdoses, interaction among drugs, and unusual drug kinetics in your patient.

If overdosage occurs, use of activated charcoal, emesis, or lavage should be considered along with clinical monitoring and supportive therapy. Renal dialysis for four to six hours increased plasma clearance.

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Additional information available to the profession on request.

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Home Monitoring in Hawaii: The first 1,000 patients

Michael J. Light, MB, MRCP (UK)*
Mary S. Sheridan, PhD, ACSW**

By February 1988, 1,000 Hawaii infants had been prescribed cardiorespiratory monitors for use at home. By 1986, 12.3/1000 live births were being monitored, principally for apnea related to prematurity but also following Apparent Life Threatening Episodes, (ALTE) as subsequent siblings of Sudden Infant Death Syndrome (SIDS) victims, and for an increasing variety of other conditions. Less than 3% of families used the monitor less than 1 week; 30% discontinued sooner than the program recommended. Twenty-seven percent of the monitored infants were judged to have experienced real apnea or bradycardia while on their monitors. Seventeen of the patients are known to be dead, with 2 of these deaths occurring while the symptomatic patient was not monitored. Parents responding to a quality assurance questionnaire were highly enthusiastic about monitoring and felt it was a source of reassurance rather than a stressor. Major problems encountered by monitoring families were related to equipment performance.

In 1981, responsibility for an organized home infantile apnea monitoring program was assumed by the Pediatric Pulmonary Center at Kapiolani Medical Center for Women and Children. By July 1984, the program (then under the Pulmonary Service) had served its 300th patient, and we presented information on its early experiences in an article in this journal in November 1985.[1] At that time, the rapid growth of the program in terms of numbers and types of patients who were served was noted, as well as the impact of improved technology in making home care medically and psychosocially feasible for infants at risk. Less than 4 years later, in February 1988, the program had served its 1,000th patient. This is an appropriate occasion, once again, to present information to the community.

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Considerations from the Literature

The National Institutes of Health convened a consensus conference on apnea-monitoring in 1986.[2] Although recognizing that much remains to be learned about apnea and SIDS, the report generated by this conference accepted monitoring as an appropriate therapy for infants with apnea, bradycardia, or other high-risk conditions. It recommended close collaboration between families and medical caregivers on decisions whether to initiate or to discontinue monitoring, and it recognized the necessity for technical, psychosocial and community support to be given to monitoring families.

Perhaps the 2 most central questions, still to be answered about monitoring, concern prediction and prevention.

At present, no good mechanisms or data give answers to either concern. Twelve-hour continuous heart rate and respiratory recordings (pneumograms) provide hard-copy data during the evaluative period, and otherwise as needed. These are generally regarded as a useful means of documenting the presence and extent of apnea, bradycardia, and periodic breathing, particularly where clinical observations are of doubtful value, and do not predict SIDS.[3] Nor is it known definitively whether monitoring prevents morbidity and mortality due to apnea, anoxic insult and related risk conditions. The consensus panel found no randomized prospective studies on this topic, and recognized the difficulty of research in this area.

A cooperative study in California[4] revealed no difference in gross death rates between monitored infants and those who had been evaluated at apnea centers but for whom monitoring was not recommended. In monitored infants who died, the most common cause of death was SIDS, and nearly half the deaths (7/15) were associated with the family failing to use or to respond to the monitor. Parents frequently reported incidents that appeared life-threatening, and stated their belief that the monitor had saved the child's life. However, the condi- ►



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TABLE I
Patients By Diagnosis*

Time Period	Referrals	ALTE	Prematurity*	Subsequent Siblings	Other
2/81 - 1/82	40	14 (35%)	16 (40%)	6 (15%)	6 (15%)
2/82 - 1/83	78	34 (44%)	32 (41%)	2 (3%)	12 (15%)
2/83 - 1/84	110	33 (30%)	46 (42%)	17 (15%)	24 (22%)
2/84 - 1/85	156	23 (15%)	98 (63%)	14 (9%)	31 (20%)
2/85 - 1/86	184	20 (11%)	111 (60%)	13 (7%)	54 (29%)
2/86 - 1/87	222	47 (21%)	128 (58%)	13 (6%)	50 (23%)
2/87 - 1/88	201	30 (15%)	121 (60%)	14 (7%)	49 (24%)
2/88 (part)	9	0	5	1	3
TOTALS	1,000	201 (20%)	557 (56%)	80 (8%)	229 (23%)

* Note: Some patients have more than one diagnosis. Minor variations between charts in this article and those presented previously are due to correction of typographical errors and reclassification of several patients.

tion of the child from an objective viewpoint during such incidents was generally unknown. The ability of parents accurately to assess their child was documented as being poor.[5]

A final concern raised by the consensus panel was related to parental anxiety. Monitoring was recognized as being a psychological, physical and financial stress for the family. The risks of such stress had to be weighed against the benefits obtained from monitoring.

The data from Hawaii

Diagnoses and Demographics

The number of patients served, by diagnosis and by time period, is shown in Table I. This reveals a steady increase in the number of monitored patients through January 1987, and a leveling off, or slight decline, after that time.

In 1987, 1.08% of live births were monitored in Hawaii.[6] (Good data on monitoring are not available, but one estimate is that approximately 1% of all births nationally are monitored.[7]) Infants with a primary diagnosis of prematurity comprised the largest group of patients who were monitored, accounting for just over half of all referrals.

Survivors of ALTEs (previously called "near-miss SIDS") made up 20% of referrals, and their numbers declined in relative proportion. With time, both program and community physicians became more sophisticated in the differential diagnosis of apnea. This may account for the decreasing proportion of patients in this category. An increase was noted in patients with other diagnoses such as congenital anomalies and idiopathic apnea; 23% of all patients were in this category. This increase suggests that monitoring was increasingly recognized as a useful adjunct in a wider range of conditions, and that an increasing number of infants with multiple diagnoses were being served.

Subsequent siblings of SIDS victims comprised 8% of referrals, a proportion that showed some variability from time period to time period. This may be due to the appearance or disappearance of various hypotheses about SIDS and its preventability during the past 7 years, as well as to physician, patient and monitor program experiences and recommendations. Monitoring also created ►

TABLE II
Demographic Information

	First 300	First 1,000
Males	158 (53%)	540 (54%)
Females	142 (47%)	460 (46%)
Residence at time of referral*		
Honolulu	102 (34%)	336 (34%)
Balance of Oahu	138 (46%)	442 (44%)
Island of Hawaii	26 (7%)	101 (10%)
Maui	15 (5%)	57 (6%)
Kauai	10 (3%)	39 (4%)
Molokai	4 (1%)	14 (1%)
Lanai	1 (< 1%)	3 (<1%)
Nonresident	4 (1%)	8 (1%)
Ethnicity**		
Caucasian	91 (30%)	280 (28%)
Hawaiian/Part	84 (28%)	283 (28%)
Filipino	41 (14%)	139 (14%)
Japanese	24 (8%)	101 (10%)
Chinese	15 (5%)	34 (3%)
Black	10 (3%)	29 (3%)
Other/unknown	35 (12%)	134 (13%)
Payment for care: +		
Insurance/HMO	126 (42%)	505 (50%)
CHAMPUS	81 (27%)	188 (19%)
DSSH	91 (30%)	306 (30%)
No coverage	2 (<1%)	11 (1%)

* differs from table in the previous article, which showed residence at the time of writing.
** using DOH criteria
\+ some families had more than one form of coverage

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TABLE III
Discharge Experience (as of 8/88)

Referred	Completed Monitoring	Used <1 Wk.	D/C AMA*	Avg. Use**	Episodes***
2/81 - 1/82	40/40	3 (8%)	15 (38%)	5.2	15 (38%)
2/82 - 1/83	78/78	1 (1%)	21 (27%)	6.7	46 (59%)
2/83 - 1/84	110/110	7 (6%)	31 (28%)	5.4	48 (44%)
2/84 - 1/85	156/156	4 (3%)	56 (36%)	5.4	66 (42%)
2/85 - 1/86	182/184	4 (2%)	63 (35%)	5.1	38 (21%)
2/86 - 1/87	220/222	7 (3%)	57 (26%)	4.7	28 (25%)
2/87 - 1/88	177/201	2 (1%)	56 (28%)	4.0	49 (22%)
2/88 (part)	7/9	0	2 (28%)	2.4	1 (14%)
TOTALS		28 (3%)	301 (30%)		

* Discontinued monitoring against medical advice.
** in months, for all patients who used the monitor >1 week.
*** parents reported apnea or bradycardia at home; reports judged reliable. (% in this column is of patients using the monitor more than 1 week)

its own 2nd generation; 43 of the 1st 1,000 patients were younger siblings of infants who had been monitored as infants in Hawaii or elsewhere. Ten of these infants were monitored primarily because of parental concern due to the experience with a previously monitored baby; the remainder were themselves at risk or were also subsequent siblings of SIDS.

Demographic information about the families is presented in Table II. Ethnicity and place of residence at the time of referral remained unchanged throughout the program. As would be expected, 79% of the patients were from Oahu. The modal patient came from outside of Honolulu proper, was Hawaiian or part-Hawaiian, and had care paid for by insurance. Over time, the relative number of CHAMPUS patients declined and patients were less likely to have insurance coverage (although the number of patients with no coverage remained small). With the cooperation of Oxymed Hawaii, durable medical equipment vendor for the first 1,000 patients, and through the generosity of 2 families who donated monitors to the program, infants with no insurance coverage were able to receive their monitor free of charge. Costs were partially waived on a case-by-case basis for other families who experienced financial hardship.

Compliance and Experience

Table III shows the monitoring experience of the 1st 1,000 patients. Only 28 families (2.8%) accepted a monitor but failed to use it for at least a week. A closer look at these families suggests that the diagnoses and the sources of payment for medical care were similar to those of our population as a whole. Families that failed to use monitors were more likely to stem from minority ethnic groups such as the Vietnamese, the Koreans, the Samoans, or the blacks. They were less likely (14% vs. 28%) to be Caucasians. These data suggest cultural factors in the acceptance or rejection of monitors, but they are not statistically significant.

Thirty percent of parents discontinued the monitor sooner than was recommended by the program. The remainder complied with program advice. In the first 5 years of the program, monitoring was recommended for all infants until they had reached both 7 months of age and 3 months free of apparently real monitor alarms. In August 1986, the requirement of 7 months of age was dropped. After that the average length of monitoring decreased from 5-6 months to 4-5 months, without there being a significant change in levels of compliance.

The number of families reporting apneic or bradycardic episodes considered "real" has declined throughout the program. However, this statistic must be approached with caution. Over time, the program imposed more restrictive criteria in classifying episodes as "real" based on parental report. Toward the end of the period reported herewith, for an episode to be considered real, parents had to report observations such as pallor, cyanosis, or the absence of movements of the chest. Once the actual recording of events became available,[8] the program was able to obtain hard-copy documentation of respiration and heart rate on pre-selected patients during all alarms. Event recorders were prescribed whenever families reported multiple alarms or events for which no clear precipitating factor could be determined. Event recording has proven itself highly useful, and monitors are now available that record and analyze apnea, bradycardia, and periodic breathing, as well as the times that the monitor is turned on and off.[9]

Several specific questions about outcomes are of particular interest. Table IV details the experience based on diagnosis. This suggests that families with subsequent siblings, and with ALTE patients who had been premature, tended to use monitors longer. High anxiety has been documented in both SIDS and ALTE parents. Infants with ALTE were reported as having more apparently real alarms at home. Premature ALTE infants had alarms reported for a slightly longer time period than was reported in any other group.

As expected, pneumograms were not predictive of the occurrence of apnea or bradycardia at home. Families ►



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TABLE IV
Outcome by Diagnosis
(Inactive Patients)

Diagnosis	Months Used (avg.)	Episodes	Last Episode*
All prematures (N = 530)	4.7	30%	3.0
Prematures <30 wks (N = 112)	5.1	27%	4.1
Prematures 30-37 wks (N = 416)	4.7	31%	2.8
ALTE (N = 201)	4.0	37%	3.9
Premature ALTEs (N = 51)**	5.0	39%	4.9
Subsequent Sibling of SIDS (N = 80)	7.7	26%	4.6

* during month of use (average); reliably reported
** average gestational age 34 weeks

who discontinued monitoring earlier than recommended were somewhat more likely to have had an infant with a normal pneumogram (51% vs. 40%), but this was not significant.

Outcomes were also tabulated for twins. Thirty-two twin pairs and 24 other infants with a twin were monitored (2 of these had a twin who died of SIDS). In 4 of the twin pairs, both twins had episodes, and in 4 pairs 1 twin had episodes while the other did not. Five of the single member of twins, including one of the SIDS twins, also had episodes. Although, early in the program, I feared the risk to an unmonitored twin, the program documented no instances in which such an infant, who was not a SIDS survivor, later developed apnea. Early fears that the surviving twin of a SIDS victim was at extremely high risk[10], as well as general predictions about increased risk to subsequent siblings of SIDS, have not been supported[11].

Seventeen of these 1st 1,000 patients are known to be dead; 5 of these deaths are possibly due to SIDS. (see Table V).

These statistics compared with 26 deaths from all causes (14/1000, 50% SIDS) among 1,841 monitored patients in California[12] and 10 SIDS deaths among 765 monitored patients (13/1000) in Maryland[13].

The causes of death in Hawaii's patients, and the reasons for which the monitors were prescribed, varied. The program itself does not recommend monitoring for conditions that are known to be terminal, but recognizes that monitors may be useful where families are highly anxious about the child's symptoms, or wish everything possible to be done. Two deaths were directly related to a family's not using the monitor during a period of active alarms; in 1 of these a sibling accidentally turned off the monitor — a risk now decreased by child-resistant switches. Two other deaths followed a family's returning the monitor without program permission: 1 of these deaths, however, was at 15 months of age. The question of whether any of these deaths were preventable is impossible to answer with certainty. It has also been raised by the California and Maryland studies, cited above, which also found noncompliance with monitoring to be a factor in such deaths.

Three other sets of (Hawaii) parents responded promptly and correctly (1 was actually on the premises of a hospital at the time), but the infants did not respond to resuscitation.

Parental Satisfaction

In July 1987, the program mailed questionnaires to all families then active or who had discontinued monitoring within the previous 6 months. New families were subsequently surveyed in January and July of 1988. A total of 128 replies were received. Results are shown in Table VI.

Parents who responded seemed to be enthusiastic about monitoring. They saw it as a source of security (85%) rather than as a source of tension, and were generally satisfied with the training, equipment performance and follow-up services they received. When asked to comment on their "biggest problems" while monitoring, parents most frequently cited equipment-related issues such as false alarms and skin irritation from electrodes, decreased

TABLE V
Deaths

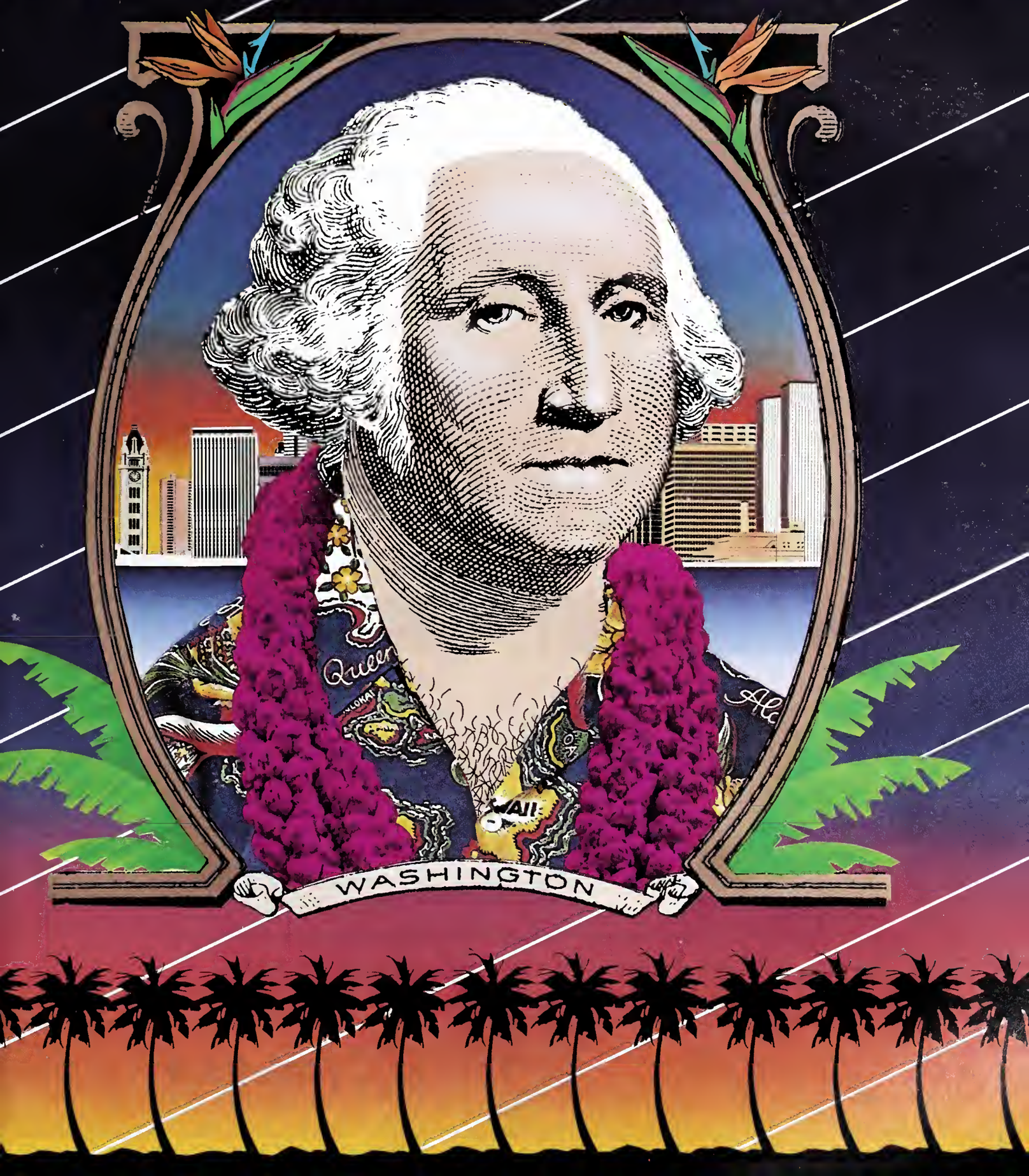
Patient #	Cause	Preventable?
A21	congenital anomalies	No
A162	congenital anomalies	No
A172	cardiac anomalies	No
A207	BPD	No
A221*	Pneumonia	Possibly
A278	camptomelic dwarf, PDA	No
A316	sequelae of birth asphyxia	No
A326**	SIDS	Unknown
A394	BPD	No
A448***	Unconfirmed SIDS	Possibly
A463**	Unconfirmed SIDS at 15 mos.	Unknown
B3	Unconfirmed SIDS	Unknown
B113	congenital anomalies	No
B192+	Unconfirmed SIDS	No
B194	cardiac arrhythmia	Probably not
B295	2-year-old w/meduloblastoma	No
B299	Unknown physical cause	Unknown
B330	multiple congenital anomalies	No

* monitor d/c'd by family during period of alarms, baby later found dead
** family had returned monitor earlier against advice.
*** sibling turned off monitor during period of active apnea, baby found dead
\+ occurred at other hospital, code team unable to resus.
PDA = Patent Ductus Arteriosus
BPD = Bronchopulmonary Dysplasia

(Continued on page 327)

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Take a closer look at a few of the many products and services offered by banks in today's marketplace.



Deposit Services

Probably the first thing that any new company does is start a bank deposit account — usually a business checking account, followed by several other deposit accounts. That makes sense. They are the basic necessities for doing business. Every company must maintain its accounts receivable and payable in good order if it is to remain in business for long.

But deposit accounts are no longer a simple matter. Today, there is a wide variety of such accounts. These include cash-concentration accounts, as well as regular checking and savings accounts.

For example, a cash-concentration account combines two or more regular checking accounts into one large account at the end of each day. This allows business managers to earn higher interest on their various accounts because interest is based upon account totals at the end of each day. By themselves, the two or more separate checking accounts would earn less interest. During working hours, the separate checking accounts continue to operate in a regular manner.

Bonnie Altig, Assistant Vice President/Marketing Director at the Bank of Honolulu says, "Fortunately, there are such variety in deposit accounts that there is one that's right for every company, no matter their size or cash flow."

She adds that businesses should look for a bank or banker that will help them match services to their needs, instead of trying to fit the business into whatever the bank has to offer.

Loans & Credit Services

While deposit accounts provide lots of methods for business to earn money, loans and credit lines provide business with the ability to get started, to expand, and to react to emergencies or moments of opportunity. A flexible credit line or a well structured loan are often the key to success in business.

As with deposit products, financial institutions offer dozens of individual products, such as working capital lines of credit, commercial letters of credit, assigned time deposit loans, and so on. They even have specialized loan packages designed for automobile or boat purchases, agricultural investments, or for commercial and industrial equipment purchases. Because of the variety of products available, business managers should shop around and inquire before



committing themselves to long-term loan or credit arrangements.

Perhaps the fastest-growing credit area in recent years has been business credit cards. They are a convenient tool that allow companies to make minor purchases, while maintaining cash flow and better monitor expenses.

All major banks and savings & loans today offer business credit cards. Their use has more than tripled in the last decade alone and, with international business on the rise, it is expected to continue to grow for the foreseeable future.

The use of business credit cards is fairly simple. "Several key employees of the company are given credit cards in the name of the company," explains Central Pacific Bank Assistant Vice President Wayne Kirihara. "Otherwise, employees will have to use their personal credit cards, and go through procedures of filling out expense sheets and waiting for the company to reimburse them." Then, when items are purchased, the company is billed for them, not the individual.

Trust Services

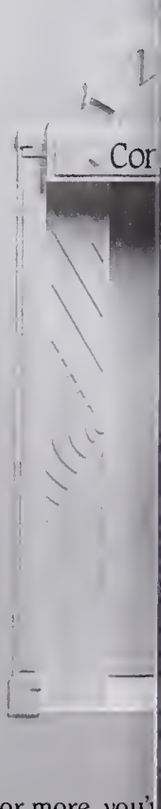
Hawaii's best-kept secret is that trust organizations can provide certain essential services for one-half to one-third of what other groups have charged — and offer more. That's what a new nationwide survey shows.

Trust industry pioneer Robert R. Midkiff, Chairman of Bishop Trust Co., Ltd. and President/founder of American Trust Co. of Hawaii, points to the mammoth new *'Bank Earnings International Performance Survey'* of bank trust departments

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Financial institutions can provide real estate funding for practically everything connected to property.

Bishop also ranked in the top 10 percent of all 227 fixed income funds for 1988 by *Pensions & Investment Age.*

"Trust organizations now offer the best bargain in town for essential business services," Midkiff says.

Real Estate Services

Another large, and traditional, area of corporate financing involves the acquisition and development of real estate. Here too, the number of products available to business has soared in recent years.

"More individuals and businesses are financing their operations now by using the equity in their homes or business property," says Sal Pagliaro, Vice President of GECC Financial Corp. "A very popular and convenient way of doing this is by setting up a real estate line of credit."

Financial institutions can provide real estate funding for practically everything connected to property, from the purchase of land, to construction or renovation costs, to permanent financing. Revolving lines of credit on the property or inventory are often offered, as are escrow services, income property loans and so on.

Because real estate investments are usually long-term, and for large amounts of money, business managers are again encouraged to shop around before committing themselves.

Merchant Services

Probably the fastest-growing area of financial services for business has been in the area of merchant services, often called delivery products by banks.

Some of these products have been around for many years, such as lockbox, night depository, check reconciliation and payroll services. Others, like bank-by-phone, electronic funds transfer, and on-line debit card service are newer. Many of them are rarely used by business, especially small business, because they are not understood or they are too technical and complex. That's unfortunate, because these bank services can provide much peace of mind for business owners and managers.

For example, most of the larger banks in Hawaii have products that will automatically provide small or large businesses with daily summaries of their savings and checking accounts by sending the information directly



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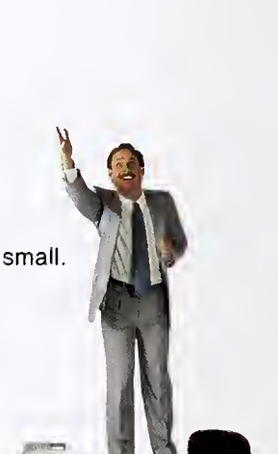
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Ed Pei,
Vice President
First Hawaiian Bank
Electronic Banking Division

to the company's computer. This allows managers to keep on top of expenses and income. The management of cash is greatly simplified with little or no effort by business people.

In short "Merchant services help companies get better control over their money," says Ed Pei, Vice President of First Hawaiian Bank's Electronic Banking Division. "They can control their accounts payable and receivable, as well as get faster access to their funds in case of emergencies or fast-breaking business opportunities."

Used properly, these financial services can result in great savings over a period of time. However, because of their complexity, managers need to be aware of their financial needs and how each of these products can help before committing to use them.

Leasing

Business leasing is another area that has grown rapidly in recent years. When it comes to getting office equipment, leasing may be more practical than buying in many instances. That's especially true for such things as computers, telephone systems or facsimile machines.

"These items become obsolete quickly.," says Ken Oishi of Bancorp Leasing, "Making long-term investments in them is not practical for many companies."

Financial institutions will often assist business managers by comparing the cost of purchasing equipment, with the cost of leasing it. Such advice is free and allows business people greater flexibility in dealing with expensive purchases.

Today leasing has progressed to the stage that almost anything with a value assigned to it — up to a Boeing 747 — can be leased.

International Banking Services

Another area that has seen growth and will probably see even more in the years ahead is international banking services. Offered by only the largest financial institutions, these bank products are no longer aimed at only big multinational firms. More and more, small retail and wholesale operators are becoming importers or exporters of merchandise or personal services. The receipt of foreign invoices, and the payment of foreign invoices, dividends and loans is becoming more and more commonplace.



"As the business environment in Hawaii grows globally and we see more Pacific Rim type operations, there is more of a need for international banking."

Reg Baker,
Manager of Finance, Administration & Operations
Bank of Hawaii's International Banking Division.

Other products in this area include commerical letters of credit, export financing and currency exchange. The very largest local banks even offer branch offices in various foreign countries, while many local financial institutions have corresponding banking relationships with overseas partners.

"As the business environment in Hawaii grows globally and we are more Pacific Rim type operations, there is more of a need for international banking," says Reg Baker, Manager of Finance, Administration and Operations of Bank of Hawaii's International Banking Division.

Financial Business Products/Services

Below is a sampling of financial services and products offered by Hawaii institutions. The names of the products may vary from institution to institution.

Deposit Services

- ☐ Business Checking
- ☐ Business Savings Accounts
- ☐ Business Money Market Accts.
- ☐ Time Certificates of Deposit
- ☐ Employer-sponsored Retirement Plans
- ☐ Cash Concentration Accounts

Loans/Credit Lines

- ☐ Accounts Receivable Financing
- ☐ Agricultural Loans
- ☐ Assigned Time Deposits
- ☐ Automobile Leasing
- ☐ Business Credit Cards
- ☐ Employee Stock Ownership Loans
- ☐ Dealer Automobile Financing
- ☐ Equipment Leasing
- ☐ Equity Lines of Credit
- ☐ Equity Loans
- ☐ Factoring Services
- ☐ Hawaii Capital Loans
- ☐ Leveraged Leases
- ☐ Small Business Loans
- ☐ Standby Bond Repurchase Agreements
- ☐ Warehouse Receipt Services

Trust Services

- ☐ Personal Trusts
- ☐ Strategic Investment Management
- ☐ Financial Planning
- ☐ Property Management
- ☐ Estate Planning
- ☐ Probate Administration
- ☐ Tax-qualified Pension and Profit Sharing Plans
- ☐ Deferred Savings Plans -(401k)
- ☐ Employee Stock Ownership Plans (ESOPs)
- ☐ Land Trusts
- ☐ Agency accounts for Plan Administration
- ☐ Co-trustee for Personal Trusts
- ☐ Trustee for Charitable Foundations and Educational Institutions

Real Estate Services

- ☐ Land Purchase Loans
- ☐ Construction Loans
- ☐ Income Property Financing
- ☐ Interim Property Financing
- ☐ Interim/Short Term Financing
- ☐ Escrow Services
- ☐ Improvement Loans
- ☐ Investment/Working Capital

Merchant Services

- ☐ Check Reconciliation Services
- ☐ Check Verification Services
- ☐ Credit Card Authorizations
- ☐ Bank-by-Mail
- ☐ Bank-by -Phone
- ☐ Direct Deposit Services
- ☐ Electronic Draft Capture
- ☐ Lockbox Services
- ☐ Night Depository
- ☐ Payroll Management Services
- ☐ Safe Deposit Boxes
- ☐ Tax Accounting Services

International Services

- ☐ Commercial Letters of Credit
- ☐ Standby Letters of Credit
- ☐ Foreign Currency Exchange
- ☐ Wire Transfers
- ☐ Foreign Drafts



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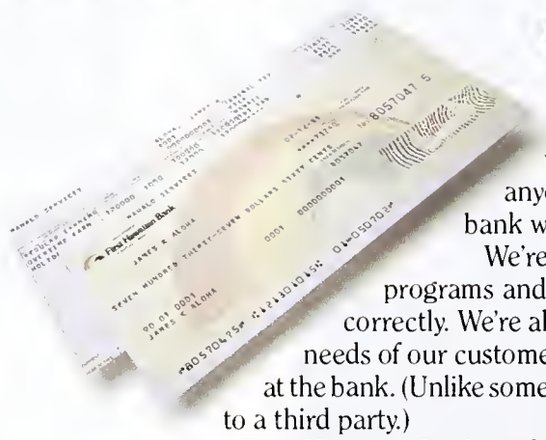


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TABLE VI

Parental Satisfaction with Monitoring
(N = 128)

A. Item averages (maximum 4 of the Lickert scale)		
At the beginning of monitoring:		
Knew why monitor needed		3.73
Agreed that it was needed		3.81
Knew how to use monitor		3.76
Knew how to respond to alarms		3.79
Knew CPR		3.65
While baby was on monitor:		
How equipment worked		3.55
Vendor service		3.62
Monitor program service		3.82
Overall average score (Maximum 32)		29.6
B. Emotional Response to Monitoring		
"Monitor made me feel . . .":		
More secure	109	85%
More nervous	4	3%
Both	12	10%
Neither/no response	3	2%

mobility, or other practical issues. When asked to comment on "good things that happened" while monitoring, families most often cited increased feelings of security, or ability to sleep better, or being quickly alerted to problems with the baby. One mother wrote: "I was scared to death when I found out that my baby had a breathing problem. The apnea monitor was so alien to me, but it became like a friend once I got used to it. I understood that it was a precautionary measure and not something bad. My baby is now very healthy and has lots of fun. . . ."

Analysis of the questionnaires shows no significant variation in satisfaction based on the infant's diagnosis, whether or not the infant had episodes at home, or whether or not parents chose to follow program recommendations about length of monitoring.

Three monitor models were used with the 1st 1,000 patients: The Healthdyne 16000, requiring manual sensitivity setting; the Healthdyne 16900; and the Aequitron 8200 (the modal unit). Both the latter had child-resistant switches and automatic sensitivity setting. Half the families using the Healthdyne 16000 reported problems with false alarms, while less than 1/4 reported this problem with either of the other 2 units. Overall reported satisfaction with "how the monitor worked" was highest with the Aequitron, but differences among the 3 units were not significant.

Conclusions

We concluded our 1985 article by observing that the use of home monitoring was controversial and changing rapidly in technology. Both statements remain correct. Across the nation, as in Hawaii, home monitoring has become sophisticated in the terms of equipment offered to families, and in the training that goes with it. The federal government has developed technical standards in draft form for monitors. Groups of providers involved in the care of apnea, such as those associated with the National Association of Apnea Professionals, are developing standards of their own for patient care. However, apnea-monitoring still lacks a clear, empirical understanding of etiology. The physical benefits of monitoring have not yet been established. Little progress has been made in understanding SIDS. The development of continously recording monitors obviously opens many opportunities for research and clinical study, and may ultimately provide a key as to whether or not monitoring is found to be effective. While this research proceeds, Hawaii's data suggest that families themselves find monitoring a reassuring means of dealing with risks to their baby. ■

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Joint venture acquisition of expensive medical technology by Oahu hospitals

Planning, operations and impact of lithotripsy and magnetic resonance imaging

Cyril Roseman, PhD*
Richard Stenson, FACHE, MRA**
Cullen Hayashida, PhD***

Expensive diagnostic and treatment services and equipment are naturally suited to large, populous medical market areas, with sufficient forecasted service demand to justify the large investment in capital, construction and staffing. Only major tertiary or secondary medical centers with shared resources can justify the first-generation investment in the multimillion-dollar purchases of magnetic resonance imaging (MRI), megavoltage linear accelerators, or lithotripters. The regional referral system in most nations accommodates the outlying population in the less developed rural sectors.

Background

The efforts by physicians and hospitals to obtain the latest and best equipment for their patients and their institutions (in order to capture markets) have contributed to expanded deployment of such high-cost technology in smaller, less specialized facilities, perhaps beyond the originally identified appropriate need for such specialized care.

In 1985, there were 224 MRI machines in operation worldwide, half of them in the U.S.[1] Since then, there has been substanial growth in the use of MRI technology and other imaging techniques. Biomedical Business International (BBI) had estimated that by the end of 1986, there were 700 installed in the U.S. alone, more than half in free-standing outpatient centers or mobile units[2]. More recently, it has been estimated that there are "close to 800 MRI units installed in the U.S." as of November 1987[3].

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*** Project Coordinator of the Maluhia Home Health Care Project, Honolulu

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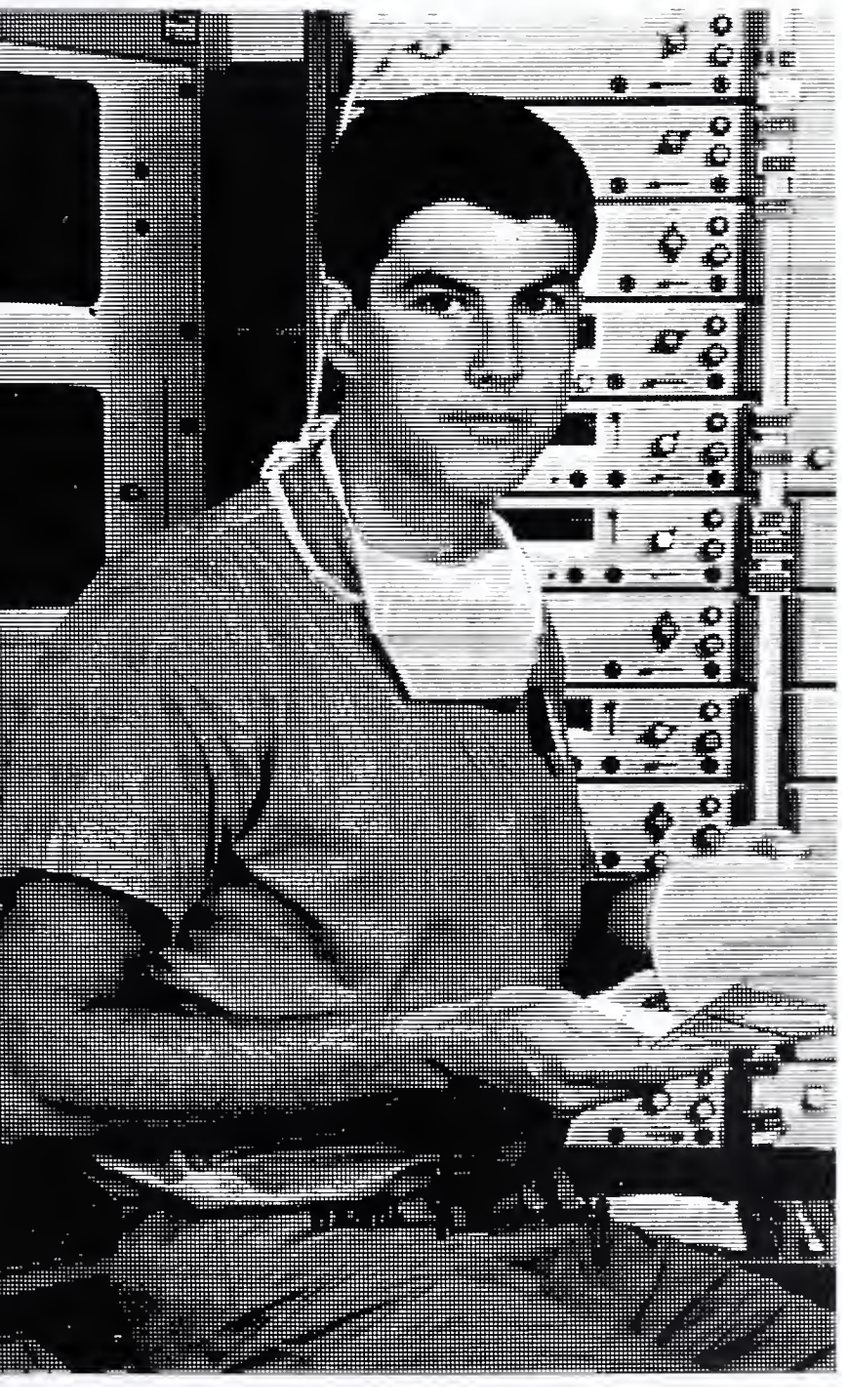
As for the Dornier Lithotripter, which was given FDA approval in December 1984, BBI had estimated in 1986 there were 228 worldwide, with 115 in the U.S. Since then, the Dornier Lithotripter manufacturer has been contending with large backorders, while 6 competing vendors were anticipating the release of their products in 1987 and 1988 at 40% to 50% of the cost of the Dornier machine[3].

Wherever the population of the service area is large enough to permit competition among tertiary hospital centers, and several magnetic resonance imagers and/or lithotripters have been installed, the community, the financial backers, the health-care insurance underwriters and the co-paying recipients of care have paid for what may ultimately prove to be excess capacity, resulting in artificially generated demand or overutilization. The realistic forecast of future use in a market area is critical to cost-effective investment in technology.

One response to this potential inappropriate and high-cost installation of rarely used medical resources has been to plan and regulate via the certification of need (CON) mechanism by state planning agencies. This approach, though used commonly in the United States during the 1970s, had little impact on the overall growth rate and diffusion of CT-scanners, one of the main targets of control of American health planners[4,5]. For this reason, among others, CON — and health planning in general — has generally faded from center stage in many American states and communities. Nevertheless, there are still those, such as the State of Hawaii, that have continued into the late 1980s to deploy this regulatory strategy in the attempt to build a cost-conscious, and cost-efficient health-care system.

As the opportunity for new, expensive technologies emerged in the mid-1980s, the Hawaii State Health Planning and Development Agency (SHPDA) became concerned that duplication and redundancy might be the consequences of the State's diagnostic imaging and lithotripsy acquisitions. Hawaii, with a population of 1.1 million, has 10 hospitals on the island of Oahu (home of ►

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more than 80% of the State's total population). Among the 10 Oahu hospitals are 6 Honolulu metropolitan hospitals and a >500-bed military hospital offering a total of about 2,100 centrally located beds in facilities ranging in number from 160 to over 500.

In 1986, when the Hawaii SHPDA reviewed the applications for both a lithotripter and a magnetic resonance imager under its CON procedures, it was quite clear that, in both cases, the guiding principal was for a single acquisition of each; and if more than one facility were interested, a joint application was strongly encouraged. As a Hawaii State Health Plan chapter on emerging medical technology indicated in December 1985:

> To maximize availability and access of new technologies, shared arrangements or joint ventures amongst and between facilities are recommended for the first three years. During this time, SHPDA and the facility will cooperate in an evaluation of the use and benefit of this equipment, drug or procedure. At the end of three years, a recommendation will be made to determine the future numbers and locations of said technology[5].

By late 1986, after obtaining the CON and after some initial planning adjustments and operational refinements, a relocatable but stationary, free-standing MRI unit and a hospital-sited Dornier lithotripter were installed both using the organizational mechanism of joint venture partnerships involving multiple hospitals.

After nearly 2 years of operation, both efforts — separately organized — have now established themselves as financially successful enterprises and consideration is now being given to developing SHPDA criteria to evaluate the need for additional MRI units. No additional lithotripter is anticipated for the foreseeable future.

Yet, the potential, single-hospital sponsorship of a second MRI unit, and the implications of such a single-hospital owner-operation for the existing MRI joint venture (called Hawaii Health Technologies Inc. (HHT)) or, for that matter, the principle of consortium ownership and operation, have raised again the basic arguments about the advantages and disadvantages of the previously emphasized approach to joint hospital venturing in the acquisition of expensive medical equipment[6].

The move toward joint ventures in the 1980s by the hospital industry has spawned a variety of new developments, much of it undertaken with physicians' groups.

A 1984 survey conducted by National Research Corporation showed 4 in 10 hospitals nationwide sharing, or planning to share during 1985, radiological diagnostic imaging equipment[6].

Other commentaries noted the generally accepted importance of hospital joint venturing to secure the necessary capital for major acquisition in these early days of MRI[7].

The MRI capability has become more commonly accepted during the last 4 years, generating expectations of greater utilization, approval of Medicare reimbursement and private insurance coverage for inpatient use. Thus the reduced capital risk has reduced hospitals' financial incentives to enter into joint ventures. Today there is probably much less interest on the part of hospitals or their subsidiaries in joint venturing capital acquisition, with physicians groups or with other hospitals.

A 1985 study by Ernst & Whinney, one of the "Big Eight" accounting firms, showed 40% of all hospital joint ventures were undertaken with physicians' group practices, and only 18% were with other hospitals[8]. Some of these hospital-physician arrangements were focused on expensive equipment acquisition. Usually, it entailed an expansion within a free-standing facility with the doctors initiating the move for capital expansion in conjunction with the hospital's interest in a possible profitable subsidiary. One executive director of an MRI consortium claims that "if a hospital doesn't joint venture with physicians in an MRI site, the physicians will find someone else to invest with." Another has said that physician investment can actually encourage non-investing physicians to "take their business elsewhere"[9].

However, in numerous cases of equipment acquisition, especially when they have involved in-hospital siting, with attendant high costs of construction and shielding, it has not been so much doctors' groups but rather other sources of capital that have been the focus of joint venture attention. This has been particularly the case in the smaller metropolitan markets where there is not likely to be enough demand to justify multiple operations of expensive equipment. Prior to 1985, the financial profitability picture for both MRI and lithotripters increased hospitals' incentive for joint venturing.

From 1985 to 1987, the profit picture for MRIs brightened considerably, largely as a result of a virtual doubling of the frequency of use, up from 30 to 58 patients per week, and increased operational efficiency as throughout time decreased and the number of patients examined per hour increased from 0.6 to 0.8. It has been estimated that the typical MRI unit has gone from an annual loss of $460,000 in 1985 to an annual profit of $46,000 in 1987[10].

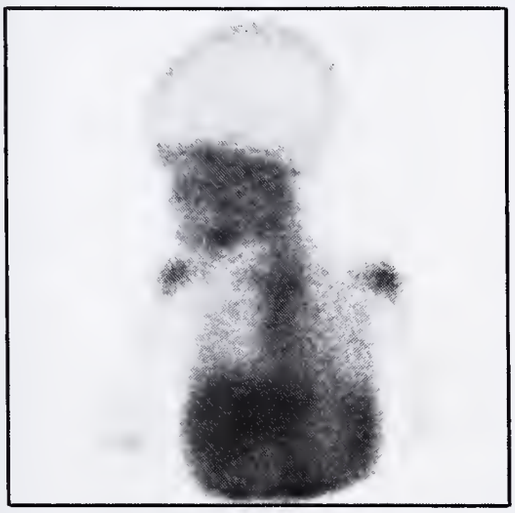
Lithotripters that are now available include less expensive technology and the financial burden of new acquisitions is not nearly as heavy for hospitals.

Likewise, mid-range magnets for MRI units, such as the new GE 0.5 tesla MR Max unit (at present being marketed primarily in Asia and Europe, although some systems have been installed in the U.S. GE is the world's leading seller of MRI; it has sold more than 300 of the 1.5 tesla Signa systems worldwide and now, with its acquisition of Thomson-CGR of France, controls 40% of the U.S. market) or the ultra-low-field units pioneered by Diasonics of South San Francisco and now manufactured by the Japanese make it possible for hospitals to pursue sole acquisition. (It is now estimated that these low-end products, with magnet strength in the range of 0.35-0.5 tesla, with Japanese-built permanent magnets, can be sold in the price range of $500,000 to $700,000. As this trend materializes it is unlikely that hospitals will have the financial incentive to enter into consortium arrangements.) Price reductions have thereby reduced the need to continue with what many feel are the more complex operating requirements of a joint hospital venture. Even

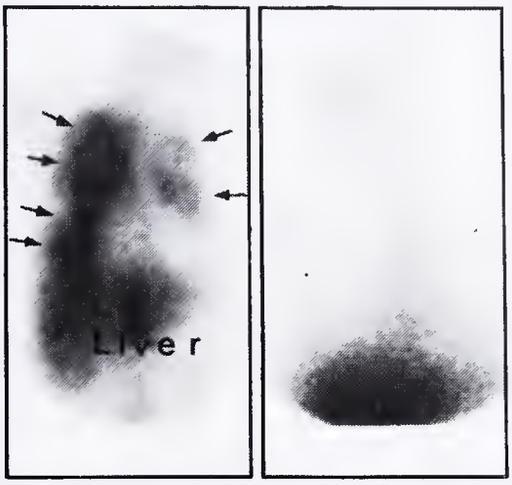
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Nuclear Medicine Teaching File

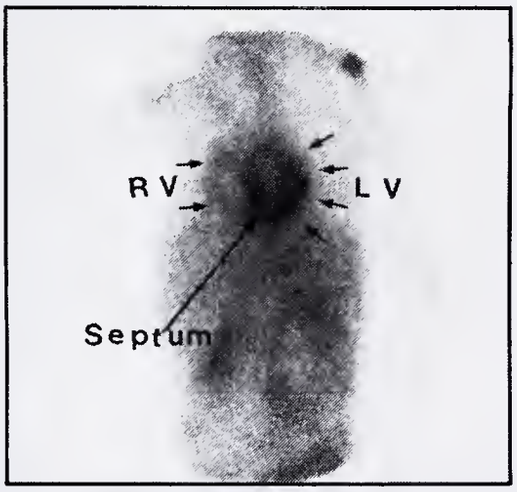
GALLIUM IMAGING FOR INFECTIOUS AND INFLAMMATORY DISORDERS



1. Normal study showing gallium localization in the liver, bone marrow, salivary glands, and mediastinum.



2. A: Increased pulmonary parenchymal localization in a 28 year old patient with active sarcoidosis. B: Negative scan documenting response to corticosteroid therapy in the same patient 4 months later.



3. Eight year old "in septic shock", referred for abscess localization. Markedly increased myocardial activity was diagnostic of unsuspected active myocarditis, and suggested cardiogenic shock.



4. Nine year old with abnormal gallium localization in the left humerus documenting the need for continued therapy for chronic osteomyelitis.

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the current national emphasis on mobile MRI units which travel from one participating hospital to another are likely to become single-hospital fixed site installations over the next 2 to 5 years. Sales of mobile MRI units have risen substantially; in 1986 and 1987 more than 150 mobile units were sold, constituting more than 17% of the American market[11].

The Hawaii Experience with CON

In Hawaii, in 1985, there were 2 significant community planning and regulatory issues, in reviewing acquisitions by multi-hospital joint ventures, that needed to be addressed: (1) The determination of the optimal number of units needed to service the population from a medical necessity perspective; and (2) the process of coping with competitive pressures within the hospital industry and medical profession and channeling this energy in order to avoid excess capacity, potential overutilization and inefficient expenditures.

In the State Health and Facilities Plan of 1985, a formula was used to determine the optimum level of capacity for acquisition of additional X-ray CT equipment (based on market size, existing and forecasted use, clinical indications, anticipated reimbursement, projected reduction in alternative medical diagnoses, geographic appropriateness and technological considerations). This needs methodology, called the Leonard Method, was designed to yield a maximum number of units allowable for acquisition within the State during a projected period of time.

Although the American Hospital Association (AHA) had developed an MRI projection formula similar to the Leonard Method for CT, and Dornier, the lithotripter manufacturer, had a utilization demand formula based on the incidence of kidney stone disease, neither was considered for adoption by Hawaii SHPDA at that time. Nevertheless, the State Plan stated that no more than one MRI should be acquired over the next 3 years, and at most only one lithotripter was needed to serve Hawaii.

Consideration of hospital-medical market competition in Hawaii was less burdensome than in many other locales. Birmingham, Alabama, where there are 9 MRI units, or the greater San Francisco Bay area, which is home to 38 MR imagers, highlight the problem. (At the other end of the competition spectrum is Pittsburgh, Pennsylvania, where in 1983 an MRI consortium was formed among 12 hospitals, Carnegie Mellon University and the University of Pittsburgh.)[12] Often the presence of one unit generates competitive desires among other, unaffiliated hospital administrators and physicians. In Hawaii, during the early planning days of 1984, the radiologists, who are primarily affiliated with specific hospitals, manifested no particular group interest in a doctor-hospital joint-venture acquisition with their respective hospitals of an MRI. Discussion focused on the unacceptability of any one hospital being designated as the site of the sole MRI that was to be approved by the Hawaii SHPDA. Instead, consideration was given to a multi-hospital joint-venture among the 5 largest metropolitan hospitals.

A history of successful cooperative efforts elsewhere was no doubt one of the reasons that the joint-venture concept was initiated here. Perhaps due to its geographic isolation some 2,350 miles from the mainland U.S., or the fact that Hawaii was never overbuilt with acute hospital beds, hospital occupancy remains high even after DRGs came into being. Hawaii's hospitals, although highly competitive, have a history of successful shared service programs. Among these are: A cooperative medical-school, teaching-hospital arrangement (which negates the need for a university medical center) called Hawaii Residency Programs Inc.; and shared nuclear-medicine supply, purchasing and computer services.

After several months spent in searching for a mutually acceptable location, the University suggested the proposed consortium use its "neutral" site in exchange for use of the MRI unit for research on Sundays.

Following guidelines recommended by the Central Arizona Health Systems Agency in 1983, the Hawaii SHPDA identified the MRI unit as a "regional resource ... [and therefore] Institutions are encouraged to form a consortium for the purpose of developing, staffing and operating a facility." The plan went on to specify the following recommendations:

> Financing and administration of a free-standing magnetic resonance facility through a cooperative effort amongst interested hospitals would avoid duplication of hardware and services and would relieve hospitals of much of the financial burden of purchasing and maintaining their individual units.
>
> A cooperative facility would prevent establishment of excess capacity which might develop if each hospital interested in providing magnetic resonance scanning services were to purchase their own unit. Thus, overutilization to pay for such excess capacity would be avoided.
>
> A cooperative facility would help to ensure equal availability of care to patients from different hospitals[13].

In November 1985 the 5-hospital consortium, called Hawaii Health Technologies (HHT), submitted a CON application for a Siemens 1.0 tesla Magnetrom M (to operate at 0.5 tesla) superconductive mobile unit leased from American Shared-Curacare (ASC), a California partnership. The MRI unit would be operated at a fixed site, furnished by the University of Hawaii near its Hyperbaric facility. It would be staffed by 10 MRI-trained, "qualified" and specifically designated physicians. Start-up costs were to be funded by $75,000 per hospital for a total of $375,000. Projected annual operating expenditures were $1.2 million. The breakeven point was projected at 1,600 patients per year. This would be attained, according to the proposal, during the first year of operation. The annual payment for the leased equipment would be $780,000. The lessor, in turn, was to provide a one-time grant of $50,000 to the university for research, and $15,000 to HHT for the training of physicians and technicians.

►

During the course of the review by Hawaii SHPDA, 4 questions were raised, the essence of which were as follows:

(1) The lack of premarket approval (PMA) from the FDA for the mobile unit and the resultant non-reimbursement by insurers;

(2) the lack of clearly established methodology for determining need, especially for outpatients, which would constitute the bulk of the demand for this service;

(3) the high annual operating cost of $1.2 million, which in turn inflates fees to patients to approximately $750 compared to $450 for a whole-body CT-scan (Medicare, Kaiser and the Hawaii Medical Service Association [Blue Shield] gave tentative coverage approvals during the CON process); and

(4) the questionable assumption that MR1-scans would replace a significant percentage of CT-scans.

As it turned out, the only question that made Hawaii SHPDA reluctant to endorse the MRI joint venture was the issue of FDA pre-market approval of the mobile unit. By February 1986, a special amendment to the ASC-HHT agreement bypassed the prospect of delayed FDA approval, and assured safety in the use of the Siemens mobile equipment as "an investigational device," until FDA approval or substitute equipment was obtained. Furthermore, SHPDA required that all patients be served according to need and without regard to reimbursement. HHT accepted this condition and the MRI Center of the Pacific was in operation by September of 1986.

Competing Joint Ventures—The Case of the Lithotripter

In the case of the joint-ventured lithotripter, there were several elements in the planning and regulatory phase of the development in Hawaii that were quite different from the MRI pattern. First, FDA approval was obtained for the Dornier Lithotripter in late 1984, and this premarket approval was never an issue in securing CON approval for the equipment in Honolulu. Second, the procedure in the U.S. had been predominantly for inpatients (Recent observations in Hawaii and on the Mainland showed that utilization was, in 1988, predominantly by outpatients.) and, as a result, even with multi-hospital joint-venturing, there was concern about the locus of the equipment and service, and the implications for marketing by competing hospitals. Third, third party reimbursement was in place for percutaneous lithotripsy by all major health insurers before the extracorporeal lithotripter was put into operation. Lastly, whereas the potential market or need for MRI was difficult to forecast, lithotripter utilization could be reasonably estimated, based on the incidence of kidney stone surgery in Hawaii hospitals.

The basic problem facing acquisition of the lithotripter was the relatively small population and number of cases estimated that would require treatment in Hawaii. Using 1983 data, SHPDA estimated the annual potential for lithotripter treatment as 202. On the other hand, the annual treatment capacity of the machine was estimated at between 1,000 and 1,500 cases[14]. Thus, the SHPDA staff and advisory committee members questioned ►



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1. For therapeutic use in patients with hypokalemia with or without metabolic alkalosis, in digitalis intoxication and in patients with hypokalemic familial periodic paralysis.

2. For the prevention of potassium depletion when the dietary intake is inadequate in the following conditions: Patients receiving digitalis and diuretics for congestive heart failure, hepatic cirrhosis with ascites, states of aldosterone excess with normal renal function, potassium-losing nephropathy, and with certain diarrheal states.

3. The use of potassium salts in patients receiving diuretics for uncomplicated essential hypertension is often unnecessary when such patients have a normal dietary pattern. Serum potassium should be checked periodically, however, and if hypokalemia occurs, dietary supplementation with potassium-containing foods may be adequate to control milder cases. In more severe cases supplementation with potassium salts may be indicated

CONTRAINDICATIONS: Potassium supplements are contraindicated in patients with hyperkalemia since a further increase in serum potassium concentration in such patients can produce cardiac arrest. Hyperkalemia may complicate any of the following conditions: Chronic renal failure, systemic acidosis such as diabetic acidosis, acute dehydration, extensive tissue breakdown as in severe burns, adrenal insufficiency, or the administration of a potassium-sparing diuretic (e.g., spironolactone, triamterene).

Wax-matrix potassium chloride preparations have produced esophageal ulceration in certain cardiac patients with esophageal compression due to enlarged left atrium.

All solid dosage forms of potassium chloride supplements are contraindicated in any patient in whom there is cause for arrest or delay in tablet passage through the gastrointestinal tract. In these instances, potassium supplementation should be with a liquid preparation.

WARNINGS: Hyperkalemia—In patients with impaired mechanisms for excreting potassium, the administration of potassium salts can produce hyperkalemia and cardiac arrest. This occurs most commonly in patients given potassium by the intravenous route but may also occur in patients given potassium orally. Potentially fatal hyperkalemia can develop rapidly and be asymptomatic. The use of potassium salts in patients with chronic renal disease, or any other condition which impairs potassium excretion, requires particularly careful monitoring of the serum potassium concentration and appropriate dosage adjustment.

Interaction with Potassium Sparing Diuretics—Hypokalemia should not be treated by the concomitant administration of potassium salts and a potassium-sparing diuretic (e.g., spironolactone or triamterene) since the simultaneous administration of these agents can produce severe hyperkalemia.

Gastrointestinal Lesions—Potassium chloride tablets have produced stenotic and/or ulcerative lesions of the small bowel and deaths. These lesions are caused by a high localized concentration of potassium ion in the region of a rapidly dissolving tablet, which injures the bowel wall and thereby produces obstruction, hemorrhage or perforation.

K-DUR tablets contain micro-crystalloids which disperse upon disintegration of the tablet. These micro-crystalloids are formulated to provide a controlled release of potassium chloride. The dispersibility of the micro-crystalloids and the controlled release of ions from them are intended to minimize the possibility of a high local concentration near the gastrointestinal mucosa and the ability of the KCl to cause stenosis or ulceration. Other means of accomplishing this (e.g., incorporation of potassium chloride into a wax matrix) have reduced the frequency of such lesions to less than one per 100,000 patient years (compared to 40–50 per 100,000 patient years with enteric-coated potassium chloride) but have not eliminated them. The frequency of GI lesions with K-DUR tablets is, at present, unknown. K-DUR tablets should be discontinued immediately and the possibility of bowel obstruction or perforation considered if severe vomiting, abdominal pain, distention, or gastrointestinal bleeding occurs.

Metabolic Acidosis—Hypokalemia in patients with metabolic acidosis should be treated with an alkalinizing potassium salt such as potassium bicarbonate, potassium citrate, potassium acetate, or potassium gluconate.

PRECAUTIONS: The diagnosis of potassium depletion is ordinarily made by demonstrating hypokalemia in a patient with a clinical history suggesting some cause for potassium depletion. In interpreting the serum potassium level, the physician should bear in mind that acute alkalosis per se can produce hypokalemia in the absence of a deficit in total body potassium while acute acidosis per se can increase the serum potassium concentration into the normal range even in the presence of a reduced total body potassium. The treatment of potassium depletion, particularly in the presence of cardiac disease, renal disease, or acidosis requires careful attention to acid-base balance and appropriate monitoring of serum electrolytes, the electrocardiogram, and the clinical status of the patient.

Laboratory Tests: Regular serum potassium determinations are recommended. In addition, during the treatment of potassium depletion, careful attention should be paid to acid-base balance, other serum electrolyte levels, the electrocardiogram, and the clinical status of the patient, particularly in the presence of cardiac disease, renal disease, or acidosis.

Drug Interactions: Potassium-sparing diuretics; see **WARNINGS**.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Long-term carcinogenicity studies in animals have not been performed.

Pregnancy Category C: Animal reproduction studies have not been conducted with K-DUR. It is also not known whether K-DUR can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. K-DUR should be given to a pregnant woman only if clearly needed.

Nursing Mothers: The normal potassium ion content of human milk is about 13 mEq per liter. Since oral potassium becomes part of the body potassium pool, so long as body potassium is not excessive, the contribution of potassium chloride supplementation should have little or no effect on the level in human milk.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS: One of the most severe adverse effects is hyperkalemia (see **CONTRAINDICATIONS, WARNINGS,** and **OVERDOSAGE**). There have also been reports of upper and lower gastrointestinal conditions including obstruction, bleeding, ulceration, and perforation (see **CONTRAINDICATIONS** and **WARNINGS**); other factors known to be associated with such conditions were present in many of these patients.

The most common adverse reactions to oral potassium salts are nausea, vomiting, abdominal discomfort, and diarrhea. These symptoms are due to irritation of the gastrointestinal tract and are best managed by taking the dose with meals or reducing the dose.

Skin rash has been reported rarely.

OVERDOSAGE: The administration of oral potassium salts to persons with normal excretory mechanisms for potassium rarely causes serious hyperkalemia. However, if excretory mechanisms are impaired or if potassium is administered too rapidly intravenously, potentially fatal hyperkalemia can result (see **CONTRAINDICATIONS** and **WARNINGS**). It is important to recognize that hyperkalemia is usually asymptomatic and may be manifested only by an increased serum potassium concentration and characteristic electrocardiographic changes (peaking of T-waves, loss of P-waves, depression of S-T segment, and prolongation of the QT-interval). Late manifestations include muscle-paralysis and cardiovascular collapse from cardiac arrest.

Treatment measures for hyperkalemia include the following:

1. Elimination of foods and medications containing potassium and of potassium-sparing diuretics.
2. Intravenous administration of 300 to 500 ml/hr of 10% dextrose solution containing 10–20 units of insulin per 1,000 ml.
3. Correction of acidosis, if present, with intravenous sodium bicarbonate.
4. Use of exchange resins, hemodialysis, or peritoneal dialysis.

In treating hyperkalemia, it should be recalled that in patients who have been stabilized on digitalis, too rapid a lowering of the serum potassium concentration can produce digitalis toxicity.

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JOINT VENTURE ACQUISITION

whether such major capital costs of the device were warranted in light of the limited need for the service in Hawaii. The savings to patients in less dangerous, non-invasive procedures, shorter hospital stays, drastically reduced recuperation periods and the elimination of Mainland travel expenses would have to offset the high costs of acquisition and operation.

It was not surprising, then, that although the State Plan questioned the need for a lithotripter, it recommended that no more than one ESWL unit be approved, with accessibility guaranteed to all diagnosed patients and qualified physicians[14]. Given the SHPDA awareness of the competing applications for an ESWL unit, the State Health and Facilities Plan strongly recommended that a consortium arrangement be encouraged. Because of the uncertain medical impact of ESWL on future kidney stone treatments, the State Plan also called for data collection and evaluation on utilization, reimbursement, recurrence of stones, and comparative studies with other forms of kidney stone treatment.

Despite this obvious market restriction, two competing proposals for the lithotripter were submitted to the State's planning agency by June 1985. When the federal Health Care Finance Administration (HCFA) approved reimbursement for lithotripsy in July of 1985, joint-venture planning for a Hawaii facility had begun; but it took the form of "complex international treaty negotiations." In spite of the substantial attempt to build agreement among all potential participating hospitals and physicians during the subsequent 9 months, the joint-venture concept ran into difficulties.

Problems arose initially over the location of the unit in a hospital and how this would relate to the other hospitals and to the urologists affiliated with other hospitals. Unlike the MRI unit, there was no real prospect of a neutral location, since most Hawaii urologists insisted that lithotripsy patients be hospitalized. Straub Clinic and Hospital, which had done almost half of the Oahu kidney stone treatments in 1984, was clearly the locus in this realm and the acknowledged leading urologist was a member of the Straub staff. (The report on treatment procedures at Oahu hospitals for 1982, 1983 and 1984 presented in a SHPDA staff report dated April 9 showed a doubling of this number of 121, reducing the Straub share of the Oahu urology market to 42.8%.) Straub also had done 85% of all the percutaneous lithotripsy operations since the inception of this treatment in the Islands. As a result, Straub originally proposed that the lithotripter be housed within their hospital and that all qualified urologists could use the facility. Not only were the other hospitals unhappy about this proposal, but the other urologists likewise were not pleased because, although Straub led in kidney stone work, it had only 3 of the State's approximately 20 urologists. There was also concern among Straub administrators that the designated medical director of the lithotripter center, William Yarborough, MD, might not want to stay at Straub and conditions specifying Straub hospital's selection of the medical director were incorporated into the partnership bylaws proposal.

Consequently, the other community urologists opted for the location for the lithotripter at The Queen's Medical Center, and a CON application was submitted by "Queen's Ventures" — a Queen's Health Systems Inc., for-profit subsidiary — in the name of the Hawaii Urology Institute (HUI), a limited partnership between The Queen's Medical Center and the non-Straub urologists. Straub responded by proposing a modification of its original organizational design, calling for participation of other hospitals as equal partners in its proposed center. Kaiser, St. Francis, and Kuakini hospitals joined the Straub proposal.

During the latter half of 1985, SHPDA encouraged Straub and Queen's to jointly submit one application. By January, when no progress had been made along these lines, SHPDA became more actively involved in promoting a negotiated settlement. By March 1986 there still was no resolution, but there had been some movement toward a common proposal. Good-faith negotiations between Straub and Queen's had yielded agreement on several points: Capital contributions, mode of operation, marketing and supervision; however, the major sticking points remained the appointment of the medical director and the location. Straub's position was that Straub and its physicians should hold authority for appointment of the first-term medical director in exchange for the placement of the machine at Queen's. Queen's position was that the urologists in the community were opposed to this and argued that the medical director's position should be the purview of an executive committee of urologists, effectively eliminating Straub control.

As a result of this impasse, SHPDA began the review of the 2 separate CON applications in late March. During the course of the review several variations of the 2 positions were identified, most of which ironically included some form of partnership between the hospitals and the urologists. On March 31, Straub reached a shared agreement with 3 other hospitals and this was given support by a SHPDA advisory committee; the Queen's-HUI was not. On April 8, the Straub application was further modified to give control of the lithotripter to HHT, the MRI consortium, with the equipment to be located at The Queen's Medical Center. The Queen's-HUI application was withdrawn, the deadlock was broken and a multi-hospital joint venture for the acquisition of a lithotripter was finally approved.

As it turned out, even this arrangement was not to last. Both Kaiser Foundation Hospital and St. Francis Hospital decided to withdraw from participation and, as a result, a separate consortium was established: The Kidney Stone Center of the Pacific, housed at Queen's, headed by William Yarborough, who was now affiliated with Queen's. Straub, Queen's and Kuakini Hospital were the general partners in the consortium. The urologists are not partners but have the power to recommend their choice of medical director.

Operation and Impact of the Two Joint Ventures

The difficulty of building a multi-hospital joint-venture for an inpatient-based lithotripter in Hawaii dramatizes the challenges for joint ventures in this new treatment modality. The Kidney Stone Center has been in operation for almost 3 years and has proven to be a medically useful and financially sound development in Hawaii. There were 424 procedures performed in 1987 (compared to the 299 high estimate of need made in 1986), at an average facility charge of $4,000. Overall, the use of lithotripsy in Hawaii has cost a patient an average of $5,600 as compared to an average of $10,000 total charges for the surgical removal of kidney stones.

At present, there appears to be sufficient machine time available to satisfy additional patient demand in the foreseeable future and, as a result, no additional equipment acquisition is contemplated. It is expected that the current 3-hospital partnership will provide the basis for the continuation of this joint-venture for some time to come. Whatever the previous difficulties were in establishing this joint-venture, it has now stabilized.

In the case of the MRI-scanner, use during its first 24 months of operation has been almost exclusively for central nervous system diseases; virtually all cases were outpatients. During 1987 there were 2,174 scans done. The center is now operating 5½ days a week, often performing as many as 16 scans a day. There is interest now, as a result of certain technical improvements, in expanding coverage to include inpatients. There is also clinical interest in moving beyond the central nervous system and to do more imaging of soft tissues, as well as in orthopedics.

Some of these proposed changes in service have arisen as a result of the replacement of the MRI unit by a GE 1.5 tesla Signa in August 1987 because of difficulties encountered as the result of a substantial loss of the cryogenic liquid helium used in the Siemens Magnetrom. The replacement machine was formerly owned by and brought to HHT by ASC at a lower cost, even though it involved a higher-yield magnet.

Other factors bearing on the proposed expansion of the MRI capability of Oahu are related to: (1) The increase in staff (by 1988 the number of participating qualified physicians had increased from 10 to 13; the number of support personnel had increased from 3 per shift to 6 per shift); (2) staff and patient dissatisfaction with the site's inconvenient location; (3) the University's dissatisfaction arising from internal dissention between the medical and engineering schools over the use of the site, and the potential loss of this location if the problem was unresolved; (4) the possibility of relocating to another site at a university-owned and operated medical facility; (5) the burdens of the work load that has made it all but impossible to carry out any research on medical efficacy, cost-effectiveness or reduction in CT scanning; (6) the radiologists' desire to increase the RF-energy level in order to permit reduction of patient throughput time, thus reducing image blur because of patient movement and, at the same time, providing an increase in operating efficiency through an increase in the number of patients seen during a work day; (7) the fees charged remaining the ►

same as originally projected, though operating costs (especially labor) are somewhat higher than anticipated; this would permit an increased return on investment, primarily only by increase in patient load; and (8) the backlog of patients awaiting exams.

Current Issues

Thus, there is interest within the medical community to expand the service by at least one more MRI unit. There is some intent within Hawaii SHPDA and its State Health Coordinating Council's Plan Development Committee to expand the service to include inpatient care, by placing another MRI at an inpatient facility. There is currently no absolutely safe way for inpatients to be served properly at the neutral site; an ambulance would have to stand by, in the event of a medical emergency.

Any attempt to expand the capacity of MR imaging would mean returning to the original 2 planning questions: (1) How shall the State determine the appropriate level of need for MRI units; and (2) how shall any expansion be managed in light of the competing forces within the Oahu hospital market?

On the first question, there has been much consideration given to the use of the American Hospital Association's MRI utilization projection models[15]. This updated model now projects both inpatient and outpatient demand, using both ICD-9-CM and DRG data; it explores potential replacement of CT-scans by MRI-scans, and offers projections in the current year as well as for 1990, based on DRG data (It is interesting that SHPDA technical advisory committee members — radiologists, administrators, and MRI personnel — are interested in paying for an analysis that relies on local CT and medical discharge data, but that there is no funding by either SHPDA or the HHT to undertake such studies statewide. There seems to be a national pattern of use of the AHA model to forecast demand for MRI, including deployment in CON applications[16].

The matter of inter-hospital competition on Oahu has now moderated as a result of the existence of the HHT and Kidney Stone Center consortium. While there are numerous advocates in the community who are ideologically committed to the preservation and possible expansion of the multi-hospital joint-venture idea, the notion of securing additional MRI units on Oahu may not be acceptable to the present 5-hospital HHT consortium.

It is the opinion of some in the medical community that the second machine should be dedicated primarily to inpatient use and that it should be sited within a hospital, not at a free-standing neutral location. Others would argue that the true need for MRI-scans on inpatients is still quite limited. In any event, as was the case in the earlier deliberations, no hospital is viewed by the others as a proper location for such an acquisition which, it is felt, would give that hospital an unfair competitive advantage in attracting a larger market share of total patient admissions. Whether this belief is valid or not is less consequential than its mere presence. The existence of the HHT consortium has not entirely eliminated inter-hospital competition. It has been suggested that whichever hospital did secure the inpatient unit would have little incentive to refer patients to the HHT Center and would in all probability withdraw from the consortium. Moreover, it is primarily the physicians who feel that the operating complexities of the joint-venture may obviate a second, inpatient-operated unit. As a result, it would be difficult at best, for a second unit to be acceptable to a CON review, even if the need is established.

The concept of a mobile unit that would be rotated among different sites adjacent to participating hospitals has been suggested as a possible solution. However, numerous objections have been raised. A major cost consideration would be the need to construct ancillary facilities at each of the participating hospitals. This would be inefficient and probably totally unworkable.

In all likelihood, eventually a day will come when additional MRI units will be established in the Islands. This will probably *not* mark the demise of the HHT joint-venture, despite the resulting need to restructure the member hospitals departing from the consortium. The significance of this propsect is that it may demonstrate the basic tenacity of the multi-hospital joint-venture, in spite of single hospital competition. This development also will most likely prove that community health planners, working through the CON process, may not insist on an organizational mold into which technological innovation must be poured, even when the motives are well meaning.

Conclusions

In 1986 when expensive new medical modalities were threatening to proliferate and result in overutilization of service, the multi-hospital joint-venture scheme was a reasonable idea which could work — sometimes with difficulty — if market forces and political considerations came together to produce a desired result. In 1988, as changes in the economics and medical efficacy of the new technology emerged, as new forces and organizational challenges developed, as the experience of joint-venturing revealed some of its operational difficulties, the prospect for such hospital consortia did not seem quite as bright. Yet this organizational form may still have a lot of life in it — in Hawaii and in other midsize metropolitan medical market areas. The basis for joint-venturing is financial risk-sharing; multi-hospital shared enterprise will address the issue of acquiring new, but very expensive equipment.

Irrespective of its projection in the immediate future, however, joint-venture will offer special challenges to students of technology diffusion and technology assessment. The use of this organizational form makes diffusion possible where otherwise it might not readily occur; in this sense joint-venture is a facilitator of technology diffusion in the early days of a new and expensive modality.

The one major deficiency in evaluating its effect, both locally and throughout the country, is a critical, objective assessment of its cost and the value of its service in comparing the joint-venture organization with the traditional, single purchaser mode of acquiring new technology. In other words, has all this effort by health planners, institutions and physicians been worthwhile? ■

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3. *Diagnostic Imaging Equipment,* Dec, 1985, p 10.
4. *Extracorporeal Shock Wave Lithotripsy* (ESWL), Dec. 1985, p 6.
5. American Hospital Association. Projecting MRI utilization: Two new approaches, *Hospital Technology Series,* Vol 6, Nov 13, 1987.
6. State regulation of MRIs appears to shift direction, *Hospitals,* Aug 16, 1985, p 105.



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Council Capers

June 2, 1989

Once upon a time . . . Did you know that the Hawaii Medical Association was founded in 1856, 133 years ago? Those were the days when there were duck ponds in Waikiki, Ala Moana Center was a swampland and horses were used to travel the dirt roads of Wailuku town. I wish I could have been there to tell you of the early Council meetings and the type of problems they confronted.

Back to the Future: After a tasty buffet, Hawaiian Poi dinner, President Kunimoto arrived in his war canoe and called to order all the Council chiefs from all the islands.

Soldier Count: Provisions . . . Month after month the membership total continues to drop. Let's stop the slide. However, the treasury continues to be in fair to good shape, staying under budget in many items.

War Paint . . . Dr. Neal Winn reported on the progress of the Statewide Medical Coalition for Reform of Torts (SMART) and its continued effort to obtain that elusive goal. Since its inception, the Coalition knew that results could not be obtained immediately but rather over a period of time. To obtain that goal, each physician will again be asked to contribute a dollar a day or $365, which seems reasonable. Is the tort liability crisis over? No, No, No! According to *JAMA,* May 19, 1989 pp. 2881, "in 1988 premium rates seem stabilized in some states, however, these periods of rapidly escalating premium costs seem to be cyclical, suggesting that similar difficulties will recur in the future." I would recommend everyone to read this article on professional liability.

Disappointed . . . The Communicable Disease Chairman reported that *HMSA* is *not* reimbursing for serological testing for HIV, since this is a screening procedure! A strong letter of protest should be sent to HMSA.

Attack, Attack, Attack . . . A strong letter of indignation by our treasurer was considered at the meeting. He said that an HMSA representative had implied to him that a number of physicians have been "upcoding" their patients' claims in order to obtain increased reimbursement. A long discussion ensued, resulting in a request to survey HMSA's "down coding" their reimbursement to patients.

(Being an Advisory Board Director of a National Health Insurance Company, which is meeting in Zurich this week, it is my *personal* and *unaffiliated* contention that the Hawaii Medical Association leadership should openly challenge HMSA and demand a meaningful dialogue on behalf of each physician in the State. Every single physician in the State has been unhappy with the demands HMSA has imposed on us at some time or another. If this is done, the respect for HMA will be greatly enhanced and the membership count would go up. Throughout the years, HMSA has been described as uncompromising, arrogant, indifferent and unwavering by many of my fellow physicians. HMA should take a stronger and more open stance on behalf of its physician members, for their patients' sake.)

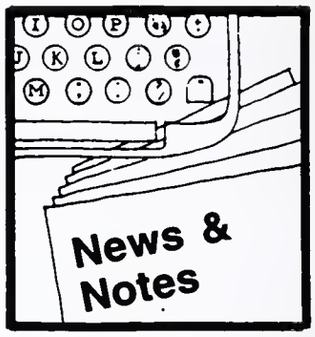
Tip of the Month: I would like to share with you the very, very best steak recipe you have ever tasted from my niece's (Mrs. Joyce Nip) cookbook. I have named it:

Super Delicious Steak

Ingredients: steak, Hawaiian salt, brown sugar, can of beer.

1) Rub brown sugar on steaks
2) Rub Hawaiian salt on steaks
3) Pour beer over steaks
4) Turn and repeat
5) Marinate at least one hour
6) Grill over charcoal
7) You'll love it!

Denis J. Fu, MD
Councilor from Maui



HENRY YOKOYAMA, MD

Life in These Parts I

A Poem As Lovely As A Tree . . . "Dr. James Kildare (Richard Chamberlain) chopped 60 trees on his Tantalus property and was fined a healthy sum in Feb. . . . Poet Joyce Kilmer, who wrote 'I think that I shall never see a poem as lovely as a tree,' must be turning in his grave . . ." (From Hawaii by Dave Donnelly)

Autologous Transfusions . . . Columnist Roy Nagle recommends for West Hawaii residents: "There is one way to avoid the danger of getting someone's unwanted viruses; donate your own blood for your own use . . . It has been estimated in one study that if all eligible patients had predonated blood, as much as 72% of the blood subsequently transfused could have been predonated. . . . If you decide to predonate, as much as four to six units of blood can be removed over a 10-week period — even patients with a history of hepatitis can participate. . . ."

"No See-Ums" . . . J.K. Sims with DOH Emergency Medical Services says that a sea weed called Lyngbya majuscula causes "swimmer's itch" . . . Other seaweeds, usually Sargassum can also cause rashes. The toxins in the offending seaweeds is a blistering agent that sometimes takes as long as 72 hours to react. . . Besides seaweeds, hydroids, corals, anemones and jelly fish can cause rashes . . . Other causes are some bacteria — certain dinoflagelletas and a parasite carried by birds that gets into the water via droppings. . . .

Dermatologist Ned Stoughton says: 1. Wash the area with warm soaks as soon as possible. 2. Apply a mixture of half 0.5% hydrocortisone and half Sarna lotion. 3. Home remedies — pour a box of baking soda in a bathtub of warm water and soak for 20 minutes. Some sit in oatmeal baths . . . Others use a baking soda paste or apply boiled taro leaves. 4. Try milk compresses or Domeboro's solution for bumps and blisters. . . .

Hawaiian Rent All (Corner of McCully and Beretania) . . . In April and May, the familiar sign read: "Tools for Rent . . . We fix almost anything except tickets" (Taking a dig at the Tom Okuda trial). In June and July: "Join the Fan Club — Rent One."

Bumper Stickers . . . A gray Jaguar XJS sporting the sticker: "Bad Boys Drive Bad Toys. . . ."

Confusing Acronyms . . . Humorist Les Luke attends the Friday morning conferences regularly . . . "When I saw on the program

'WPW,' I told my wife, 'It sounds like Veterans of Foreign Wars . . .'' Les was referring to cardiologist Ed Shen's excellent lecture, "What's New in the Therapy of WPW."

From the Horse's Mouth . . . Seven physicians who have been attending Ferdinand Marcos met the press on May 24. . . .

Steve Berman, infectious disease man: "He would die if he was off the ventilator . . . He would die if he wasn't getting dialysis . . . And he would probably die if we don't get rid of the infection or the fever . . . Then ultimately he will die from the infection and the associated complications . . ." Steve added admiringly, "He's a remarkable individual . . . Even when he is obviously limited by all of the mechanical equipment and support systems, he still gives nourishment to his family and they in turn give him nourishment. . . ."

Surgeon Livingston Wong: "Marcos is strong enough that he probably has a better than a 50-50 chance of surviving a trip to the Philippines even if he goes there only to die . . . We have seen many patients rally and improve and are able to get back to society . . . We cannot predict what's going to happen . . . Two weeks ago, he was able to get off the respirator and chat with his people and was progressing very well until the present crisis of pneumonia, infection and kidney failure. . . ."

Nephrologist Roland Ng: "Marcos may even begin the use of his transplanted kidney . . . but his ailments are like dominos set to topple in every direction. . . ."

Internist Azucena Ignacio: "A nerve and muscle disease possibly complicated by drugs to suppress rejection of his 1984 kidney transplant may have weakened his breathing muscles . . . He cannot cough, let alone breathe . . . That and pneumonia is why they cut a hole in his throat to suction and put him on a mechanical respirator three and a half months ago. . . ."

Pulmonologist George Druger: The latest pneumonia attack is improving, but Marcos still requires a machine to breathe for him 100% of the time. . . ."

Cardiologist Calvin Wong: "Marcos' heart, weakened and enlarged for years, has deteriorated . . . When his kidney failed, the weakened heart starved the body of blood, throwing it into shock . . . And the heart kicked in a chain of life-threatening irregular beats. . . ."

Hematologist Jeff Nakamura: "Marcos has enzyme and other irregularities . . . Medicine for other ailments may be the complicating factors . . . Patients with kidney failure frequently have bleeding problems. . . ."

The doctors agreed that Marcos has a low probability of long-term survival and said they are not at the hospital to play God . . . When asked how long Marcos has, Steve replied, "We are not Lords ... If we put a number on something such as life and death and we are incorrect . . . We have been through this so many times before with so many patients that generally we just shy away from such questions . . . It is not a fair question. . . ."

Cardiologist Calvin Wong: "It is a philosophical question . . . I think it is a miracle he has survived so far . . . Most of us have gone through many experiences of life and death . . . We've seen things happen that we cannot explain, so all we can do is the best we can and leave it in God's hands as to the final outcome. . . ."

Professional Moves

In May, veteran plastic surgeon Rolland Nakashima opened his new office at the Pali Momi Medical Office Bldg., Ste. 590 . . . General surgeons Werner Grebe and Mark Grief also relocated to Pali Momi, Ste. 580 . . . Internist Leonardo Cortez joined the Medical Arts Clinic, Mililani Clinic. . . .

Physician Hobbies

Cosmetic surgeon Bruce Chrisman occupies his spare time drawing, painting and sculpting wood, metal, stone, ivory and shells . . . His latest passion is Hawaiian gourds . . . Gourds from different regions produce distinct sounds and though many old Hawaiian varieties are rare, Bruce discovered they can be brought back by careful breeding . . . Bruce raises his own gourds in hand-built terraces on the rocky cliffside behind his home near Kalani High School . . . The gourds and the arcane art of gourd growing are part of a total immersion into Hawaiian culture for Bruce . . . "The more I learned about ancient Hawaiian arts, the more I realized how beautiful it was . . ." His collection of gourds plain and decorated are the result of begging and pleading all over the islands . . . Many of the gourd varieties are supposed to be extinct, but Bruce is bringing them back by careful breeding and hunting for wild varieties . . . The ipi nui, the round gourd was supposed to be extinct, but he met an old man on Kauai who ran across one up in the hills and had saved the seeds . . . "The art of decorating them has been lost for 150 years and I just have to experiment . . ." I'm just trying to use ancient methods to make things with modern styles and tastes . . . It's important to preserve ethnic arts. . . ."

Intimidated . . . A federal grand jury investigating the sudden death syndrome of an infant in 1985 had subpoenaed the records of Kauai psychiatrist Gary Blaich, who was treating the mother. Gary, defended by an ACLU attorney, Kirk Cashmere, refused to release his records, but after being confined five hours, relented . . . ACLU maintains that psychiatric records should be privileged information shared only by the doctor and the patient and Hawaii is one of 49 states that recognizes the psychotherapist-patient relation as confidential . . . Obviously the federal government does not . . . The government lawyers wanted to see if the mother had confessed to the psychiatrist that she had purposefully failed to respond to the child's heart monitor alarm. . . .

Quotable Quotes (from Star-Bulletin May 19, 1989) ... "If we don't raise fees, where are we going to get the money from? It's not going to just drop from Heaven." (John DeSoto, chairman of the City & County Budget & Finance Committee)

"I will never reapply . . . I'd rather be a pimp or a drug dealer or sell pencils." (Disbarred attorney Leonard Appel on the possibility of reapplying to the Hawaii Bar.)

Health Care (Pacific Business News article) Extracts therefrom . . . Hawaii's fast-evolving health-care field is increasingly recognized as "Hawaii's other growth industry" after tourism. . . .

In 1987, total health expenditures reached an estimated $2.1 billion — more than $1,800 per Hawaii resident and 10.7% of the gross state product — which puts health care right behind defense expenditures and in position to become the State's second-largest economic activity. Health-care dollar value is more than three times the size of sugar and pineapple combined . . . But unlike defense, tourism and agriculture, most health-care expenditures (except for government outlays) are not a source of new capital in Hawaii. Yet health care multiplies the effect of existing capital and offers a technology-oriented alternative to help diversify Hawaii's economy. . . .

In 1988, health-care-related employment exceeded 26,000, a figure that is expanding by 3% to 4% a year. . . .

Under Hawaii's 1974 compulsory health insurance law, employers are required to offer basic insurance to all full-time employees and pay at least half of the premiums. . . .

Four health-care entities generate more than $100 million each in annual revenues — HMSA, with 557,000 members (at the end of 1988) represented 54% of Hawaii's civilian population. The nonprofit HMSA received $484 million in membership dues. Medicare, Medicaid and CHAMPUS, funded by the Feds, brought in an additional $323 million in 1987. HMSA has 1,010 employees. *Queen's Health Systems Inc.* had $142.5 million in net operating revenues in 1988 and employs 28,107 workers. . . .

Kaiser Permanente's Hawaii Division revenues reached $159 million in 1988. It operates 11 facilities on Oahu and Maui serving 163,000 members. It includes 208 medical doctors and 2,435 employees. Kaiser plans a Kailua facility in 1989.

Straub Clinic & Hospital, with over 450,000 patients, has 139 doctors and 1,770 employees . . . It runs clinics in Aiea, Hawaii Kai, Kailua, Kaneohe, Mililani, the Financial District and Waikiki and offers outpatient convenience by staying open until 11 p.m.

Other major providers include Tripler Medical Center, St. Francis Medical Center, Kuakini Health Systems, Kapiolani Medical Center, Castle Medical Center, GN Wilcox Hospital (Kauai), Wahiawa General Hospital and the Honolulu Medical Group.

In the growing health insurance business, Island Care has emerged as Hawaii's third-largest plan, after HMSA and Kaiser and has 24,500 members.

Health Care Data by County - 1988

County	Beds	Doctors
Honolulu	5,120	1,917
Hawaii	667	183
Maui	556	177
Kauai	328	95
State total	**6,671**	**2,372**

The occupancy rate (determined by how government programs pay their bills) dropped from 79.1% in 1982 to 67.7% in 1985. It then ►

rose to 71.7% in 1986 and 73.8% by 1988.

Five prepaid health maintenance organizations (HMOs) and three preferred provider organizations (PPOs) now operate in Hawaii. . . .

As of Dec. 1988, licensed practitioners living in Hawaii were as follows:

Medical doctors	2,372
Dentists	881
Chiropractors	185
Naturopaths	24
Osteopaths	46
Optometrists	158

Miscellany

"What do you have when you have 20 lawyers up to their necks in sand?" "Not 'nuff sand. . . ."

* * *

"How can you tell that a lawyer is lying?" "His lips are still moving. . . ."
(Contributed by John Howett, our favorite Dista rep.)

Catastrophic Solution to Catastrophic Health Care . . . When Congress last year expanded Medicare to protect its 32 million participants from catastrophic illness, it was a piece of pre-election pork barrel politics . . . But when the seniors learned they could be charged as much as $800 annually and $1,600 per couple for the coverage, they began to fuss . . . Beginning Jan. 1, Medicare beneficiaries whose incomes are more than $10,000/year begin paying new premiums of $4/month per person plus a surtax of $22.50 on every $150 paid in federal income taxes up to a cap of $800 per person in 1989 . . . The cap increases to $850 in 1990, $900 in 1991, $950 in 1992 and $1,050 in 1993 . . . Revised revenue estimates indicate that premiums would raise twice as much as needed . . . Original estimates showed that the new premiums could generate $4.9 billion more than needed in the next five years, a reserve required by law. Recent estimates by the Congressional Budget Office and Joint Tax Committee showed revenues would generate a surplus of $9 billion. Treasury Secretary Nicholas Brady estimates the five-year surplus to be $6.2 billion rather than $9 billion and the Bush administration opposes cutting the premium. Proposals to modify the program have 155 House and Senate sponsors. . . .

A Woman on High because She's Dying . . . 34-year-old Pat Tamashiro puts in nine-hour days as administrative assistant at Aston Hotels and Resorts, cares for two worried kids (ages 10 and 7) and a husband, conducts medical research, and lobbies hard at the Legislature . . . Pat is dying of chronic myelogenous leukemia diagnosed 10 months earlier and is pushing a bill to start a local bone marrow registry of potential donors . . . The registry will be the first bank to include non-Caucasians. At St. Francis Hospital, where marrow transplants have been done for 10 years, Chief of Pathology Young Paik reports that NIH estimates that a potential marrow recipient would need a donor list between 100,000 and 500,000 to find a match. About 9,000 Americans are waiting for transplants and because so few non-Caucasians are on the lists, other ethnic groups have almost no chance of finding donors outside their immediate families. In Hawaii, of the 100 new leukemia cases a year, perhaps half will be eligible for transplants because they're under 50, of which one-fourth can be matched by family members . . . The remaining 35 patients have little chance of getting transplants especially if they're non-Caucasians . . . Young says State funding won't be enough to maintain a registry and private funding will be necessary since tissue typing alone costs about $500 and the transplant $100,000 to $200,000.

Jellyfish Sting Remedies ... J.K. Sims, our fish poison expert, recommends the same remedies for jellyfish stings and Portuguese man-of-war stings, i.e. apply vinegar, meat tenderizer paste, baking soda paste or, in a pinch, urine to the stings. These remedies denature the protein toxins. J.K. advises not to wash the stings with fresh water or rub sand onto them. (From "Ocean Watch" by Susan Scott)

Sportsmen

Golfers . . . We learned that our friend Henry Yim, playing at Mid Pac on May 10 with Joseph Young, Ed Kagihara and acupuncturist H.H. Yiu holed the 4th hole with a 6-iron . . . His first hole-in-one was on the 11th hole using a 5-iron in 1985. . . .

Golf Quotes . . . "I'm hitting the woods just great, but I'm having a terrible time getting out of them." — Golf Pro Harry Toscane

"The mind messes up more shots than the body." — Tommy Bolt

Fish Gaffs Man . . . On Memorial Day, 27-year-old Colin Mizuguchi, dietary assistant at Rehab Hospital, was getting ready to gaff a 6-foot marlin off the Makaha Coast ... The fish glared with malice at Colin, dove under the boat, swam to the rear, gathered momentum and hurled itself over two others in the boat and drove its 13-inch bill into Colins' left chest. Fortunately it narrowly missed the heart and large vessels and Colin naply survived.

Tennis Anyone? . . . One of HMA's all-time tennis greats, Leabert Fernandez (who with Yutaka Yoshida made an invincible duo that dominated the annual HMA doubles tournaments for seven years straight) has been hobbled of late by knee and back problems . . . Chagrined by his immobility, Leabert, at age 76, had a second arthroscopic surgery for his right knee in May and had his spinal stenosis corrected in June . . . When his tennis partner, Charley Ching, dropped over to Queen's on the third post-op day, he learned that the patient had removed all of his tubes and i.v.s and had signed himself out on the second post-op day . . . We now believe the story about this tennis fanatic playing tennis on the third day after a hernia surgery against his surgeon's advice. . . .

Unwritten Rules of Tennis Etiquette (Excerpts from "Tennis, Anyone?" by Stephen Kessler and Jack Barth) . . . **"Don't Learn the Rules:** As a beginner, you'll need every advantage available to compete with tennis veterans at your club. The first rule is to not learn any rules. REMEMBER: IF YOU DON'T KNOW ANY RULES, YOU'RE NOT BREAKING ANY RULES YOU KNOW OF. For example, your opponent hits a blistering shot that lands on your baseline. You say the ball is out, because it landed on the line. Your opponent cites USTA rule 22, which states categorically that any ball landing on a line is good and calls you a cheat. You tell the opponent that you didn't know the rule, because if you did, you certainly would have returned the volley. At this point, your opponent will apologize for calling you names, offer to play the point over, and probably feel guilty enough to buy you a drink after the match.

"Proper Attitude: There is no sadder sight in the world than a serious player who has just lost, shaking the hand of an opponent, and saying with a smile, "Well, I sure had a good time out there." If you want friends, join an encounter group. If you want to play tennis, there is only one word for proper attitude on the court, no matter where in the world you play, or whom you play against. That word is MEAN.

"Playing Against a Weaker Opponent: If your opponent does not play as well as you do, let it be known right away. The improper posture of showing encouragement and support over the course of match may give your opponent the confidence needed to beat you. Do yourself and your opponent a favor. Make it clear from the first serve that he has no hope of victory. If he refuses to acknowledge his proper station and has the disrespect to start winning, be gracious; call the game in your favor and offer to spend the remainder of your court time giving him pointers on his backhand.

"On Being a Gracious Loser: Three words: It doesn't pay. The victor knows you don't mean it, and you certainly know you don't mean it. Upon losing, the serious player will throw his racquet at the ground (you may throw a racquet directly at an opponent only if you do not win any games), throw fists in the air, and shout, 'You may think you put one over on me now, but I'll have you up before the Rules Committee in the morning, and if there's a Supreme Being, or even if there's not, you will fry in eternal inferno. Justice is mine!"

Miscellany

Just Checking (Lou Boyd) Excerpts therefrom . . . "Somebody asked Albert Einstein what was the most difficult thing of all to understand and he said 'Income Taxes' — Those who knew him contend he wasn't kidding."

* * *

"Am told that even pro-golfers make only about half of their six-foot putts. . . ."

* * *

"Q: Do nudist colony bowlers wear anything at all?

A: Shoes."

►



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NEWS AND NOTES

* * *

"If you dig straight down in Hawaii — all the way — you come out in Africa's Kenya. Same climate, too. Africa's zebras and giraffes do well in Hawaii's Molokai Ranch Wild Life Park, I'm told. Little wonder. . . ."

Lecture Notes

Joseph Poland, DDS, Director of Dental Services at Methodist Hospital Cancer Center, Indianapolis, Ind., lectured at a KMC oncology meeting on Mar. 9 . . . His topic: "Oral Care of the Cancer Patient."

re Viral lesions: principally HSV-1 present as multiple vesicular lesions or nonspecific necrotic ulcerations . . . Rx: Zovirax limits spread, decreases pain and promotes healing. . . .

re Bacterial infections: usually odontogenic sources . . . present as acute exacerbations of chronic gingival infections . . . Systemic and topical antimicrobial therapy esp. a new topical therapeutic Peridex (chlorhexidine gluconate) by Proctor and Gamble.

re Fungus infections: Candida is common in cancer patients . . . Fungal lesions present as pseudomembranous plaques or atrophic erythematous lesions which mimic other inflammatory and infectious processes . . . Topical vs. Systemic Therapy: Systemic Nizoral (ketoconazole) (Janssen Pharmaceuticals) is superior to topical Rx . . . Topical oral rinses and troches suffer from patient compliance. High sugar levels predispose to dental caries and periodontal disease with prolonged topical therapy. Topical therapy fails to control pharyngeal and esophageal fungal spread.

Oral Care Protocol

Materials and Agents

1. Oral-B Toothbrush
 a. size 35 or 40
2. Dental Floss
 a. unwaxed
3. Moi-stir Artificial Saliva
4. Moi-stir Swabsticks
5. Zovirax
 a. ointment
 b. capsules
 c. I.V.
6. Nizoral
 a. 200mg/tabs
7. Peridex
 a. 16 oz. bottles
8. Stomafate - for palliative pain control
 a. 12 gm. Carafate
 b. 60 ml. sterile water
 c. 80 ml. Benylin Elixir
 d. Q.S. ad to 180 ml. with Agoral
9. Antibiotics
 a. as per physician (if necessary)
10. Systemic Pain Control
 a. Capitol c Codeine - no alcohol
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2. If compromised oral membranes
 a. Peridex 1/2 oz. BID (rinse and expectorate)

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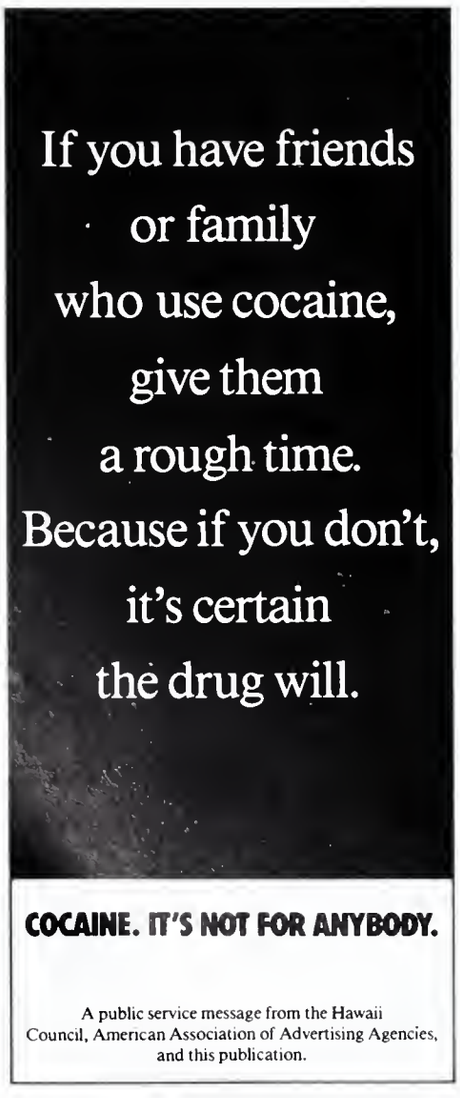
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NEWS AND NOTES

Xerostomia
1. Moi-stir
 a. spray pump
2. Moi-stir swabsticks
 a. compromised oral membranes (hygiene assist also)

Prophylaxis
1. Anti-Viral
 a. Zovirax
2. Anti-Fungal
 a. Nizoral or Nystatin
3. Peridex
 a. 1/2 oz. BID (systemic antibiotics as per physician if necessary)

Mucolytic Agent
1. Baking Soda in water
 a. make 1 qt./day - multiple daily oral rinsing

Fluoride Therapy
1. For xerostomic patients
 a. 0.4% Stannous Fluoride Gel brush on after oral hygiene conducted daily

Avoid
1. Commercial Mouthwash
 a. 20% alcohol - drying and irritating to sore mouth
2. Toothpaste
 a. irritates sore mouth
3. Products
 a. not proven safe and effective for oral care.

Dental Care and Consultation
1. Aimed at elimination of oral infection sources

Protocol Must Be:
1. Easily taught
2. Easily learned
3. Scientifically accurate
4. Reproducible
5. Efficacious

Letter To The Editor

(From Harry L. Arnold Jr., MD; 250 Laurel St., #301; San Francisco, CA 94118 (415) 921-9659)

Dear Henry:

Thanks for another nostalgic trip to Hawaii without benefit of airplane! The HMJ arrived today and I read all 4-1/3 pages of News and Notes twice with pleasure and profit. It is — as always when Fred can give you enough space — a nice mixture of humor, medical information, and just chitchat. Not one joke that I'd have felt compelled to bluepencil! I had a little trouble with the statement that ticks "and fleas" transmit the Lyme disease spirochete, though — does *any* flea actually do that? And do you know what genus and species of tick transmits it in Hawaii? It was awfully smart of Doug Johnson to make that diagnosis; did he make it from a skin lesion? If so, it must have been acquired in Hawaii; I can't imagine erythema chronicum migrans beginning more than a few weeks or months after the tick bite.

The May issue was an exceptionally good one, but as always, your News and Notes was the most entertaining and informative section. Keep it up, please!

Aloha no!
Harry

Dear Harry,

It is always so nice to hear from you, our mentor, and thanks for all the comments and encouragement . . . It is not Fred's fault that our News and Notes misses an occasional issue . . . It is simply that our own addiction to TV viewing, golf and tennis interferes with our deadlines . . . Wish we had your talent for sitting before a typewriter and pecking out an impeccable manuscript in but a few minutes.

You surmised correctly that the Lyme disease spirochete could not have been transmitted by a flea — perhaps by a mosquito as well as ticks. I looked it up in "Andrews' Disease of the Skin," 7th Edition, which you finished rewriting back in 1981 or 1982 and you say so there. Hope everything is well with you . . . What new projects are you involved in now? And please keep sending more of your sparkling commentary. . . .

Thanks again,
Henry



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EQUAL HOUSING LENDER



NANCY PACE MD, MPH, PNEUMONIA VACCINATION PROJECT PHYSICIAN OF THE STATE DOH REPORTS:—On behalf of the Department of Health, we would like to extend to each of you our sincere thanks and appreciation for your assistance during the Pneumonia Vaccine Campaign that was held from September 1988 through February 1989. Your willingness to review your patients' records for evidence of a previous pneumonia vaccination, as well as your individual input into the project, was greatly appreciated. It is because of our combined efforts in this endeavor that we can truly say that the people of Hawaii now have a higher level of health care!

There were 15,909 persons vaccinated through the statewide health program. On Oahu, we vaccinated 12,955 people; on Kauai, 681; Lanai, 157; Molokai, 245; Maui, 771 and 1,100 on Hawaii. Additionally, we know that pneumonia vaccine sales to the private sector more than doubled from 1987. This indicates that a good number of our citizens were innoculated against pneumonia.

During the clinics, we noted several common side effects to the vaccine. Approximately 50% of individuals innoculated experienced some tenderness and swelling at the site of injection, with about 30% experiencing erythema, which extended anywhere from 3 to 10 centimeters. A very small percentage of people experienced systemic side effects including malaise, mild fever and muscle aches. These were relieved with mild analgesics, and all side effects resolved within three to five days.

Without more information, persons who received the 14-valent pneumococcal vaccine should not be routinely revaccinated with the 23-valent vaccine, as increased coverage is modest and duration of protection is not well defined. However, revaccination with the 23-valent vaccine should be strongly considered for persons who received the 14-valent vaccine if they are at highest risk of fatal pneumococcal infection (e.g., asplenic patients). Revaccination should also be considered for adults at highest risk who received the 23-valent vaccine >six years before and for those shown to have rapid decline in pneumococcal antibody levels (e.g., patients with nephrotic syndrome, renal failure, or transplant recipients). Revaccination after three to five years should be considered for children with nephrotic syndrome, asplenia, or sickle cell anemia who would be <10 years old at revaccination.

CLASSIFIED NOTICES

To place a Classified Notice, MEMBERS, please call Association Office at 536-7702. NON-MEMBERS, please call Leilani at 521-0021. 4 line minimum, approximately 5 words per line. Payment must accompany order.

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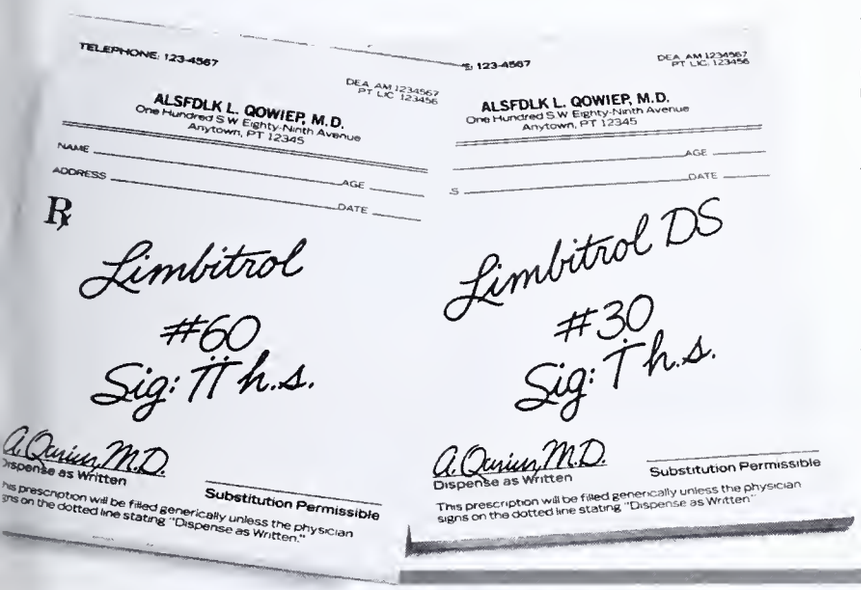
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Beyond the call

In moderate depression and anxiety

- 74% of patients experienced improved sleep after the first *h.s.* dose[1]
- First-week improvement in somatic symptoms[1]
- 50% greater improvement with Limbitrol in the first week than with amitriptyline alone[2]



Protect Your Prescribing Decision: Specify "Do not substitute."

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Each tablet contains 5 mg chlordiazepoxide and 12.5 mg amitriptyline (as the hydrochloride salt)

Limbitrol® DS Ⓥ
Each tablet contains 10 mg chlordiazepoxide and 25 mg amitriptyline (as the hydrochloride salt)

References: 1. Data on file, Hoffmann-La Roche Inc., Nutley, NJ. 2. Feighner JP, *et al: Psychopharmacology 61:*217-225, Mar 22, 1979.

Limbitrol® Ⓥ
Tranquilizer—Antidepressant
Before prescribing, please consult complete product information, a summary of which follows:

Contraindications: Known hypersensitivity to benzodiazepines or tricyclic antidepressants; concomitant use with MAOIs or within 14 days of monoamine oxidase inhibitors (then initiate cautiously, gradually increasing dosage until optimal response is achieved); during acute recovery phase following myocardial infarction.

Warnings: Use with caution in patients with history of urinary retention or angle-closure glaucoma. Severe constipation may occur when used with anticholinergics. Closely supervise cardiovascular patients. Arrhythmias, sinus tachycardia, prolongation of conduction time, myocardial infarction and stroke reported with tricyclic antidepressants, especially in high doses. Caution patients about possible combined effects with alcohol and other CNS depressants and against hazardous occupations requiring complete mental alertness (*e.g.,* operating machinery, driving).

Usage in Pregnancy: **Use of minor tranquilizers during the first trimester should almost always be avoided because of increased risk of congenital malformations. Consider possibility of pregnancy when instituting therapy.**

Withdrawal symptoms of the barbiturate type have occurred after discontinuation of benzodiazepines (see Drug Abuse and Dependence).

Precautions: Use cautiously in patients with a history of seizures, in hyperthyroid patients, those on thyroid medication, patients with impaired renal or hepatic function. Because of suicidal ideation in depressed patients, do not permit easy access to large quantities of drug. Periodic liver function tests and blood counts recommended during prolonged treatment. Amitriptyline may block action of guanethidine or similar antihypertensives. When tricyclic antidepressants are used concomitantly with cimetidine (Tagamet), clinically significant effects have been reported involving delayed elimination and increasing steady-state concentrations of the tricyclic drugs. Use of Limbitrol with other psychotropic drugs has not been evaluated; sedative effects may be additive. Discontinue several days before surgery. Limit concomitant administration of ECT to essential treatment. See Warnings for precautions about pregnancy. Should not be taken during the nursing period or by children under 12. In elderly and debilitated, limit to smallest effective dosage to preclude ataxia, oversedation, confusion or anticholinergic effects. Inform patients to consult physician before increasing dose or abruptly discontinuing this drug.

Adverse Reactions: Most frequent: drowsiness, dry mouth, constipation, blurred vision, dizziness, bloating. Less frequent: vivid dreams, impotence, tremor, confusion, nasal congestion. Rare: granulocytopenia, jaundice, hepatic dysfunction. Others: many symptoms associated with depression including anorexia, fatigue, weakness, restlessness, lethargy.

Adverse reactions not reported with Limbitrol but reported with one or both components or closely related drugs: *Cardiovascular:* Hypotension, hypertension, tachycardia, palpitations, myocardial infarction, arrhythmias, heart block, stroke. *Psychiatric:* Euphoria, apprehension, poor concentration, delusions, hallucinations, hypomania, increased or decreased libido. *Neurologic:* Incoordination, ataxia, numbness, tingling and paresthesias of the extremities, extrapyramidal symptoms, syncope, changes in EEG patterns. *Anticholinergic:* Disturbance of accommodation, paralytic ileus, urinary retention, dilatation of urinary tract. *Allergic:* Skin rash, urticaria, photosensitization, edema of face and tongue, pruritus. *Hematologic:* Bone marrow depression including agranulocytosis, eosinophilia, purpura, thrombocytopenia. *Gastrointestinal:* Nausea, epigastric distress, vomiting, anorexia, stomatitis, peculiar taste, diarrhea, black tongue. *Endocrine:* Testicular swelling, gynecomastia in the male, breast enlargement, galactorrhea and minor menstrual irregularities in the female, elevation and lowering of blood sugar levels, and syndrome of inappropriate ADH (antidiuretic hormone) secretion. *Other:* Headache, weight gain or loss, increased perspiration, urinary frequency, mydriasis, jaundice, alopecia, parotid swelling.

Drug Abuse and Dependence: Withdrawal symptoms similar to those noted with barbiturates and alcohol have occurred following abrupt discontinuance of chlordiazepoxide; more severe seen after excessive doses over extended periods; milder after taking continuously at therapeutic levels for several months. Withdrawal symptoms also reported with abrupt amitriptyline discontinuation. Therefore, after extended therapy, avoid abrupt discontinuation and taper dosage. Carefully supervise addiction-prone individuals because of predisposition to habituation and dependence.

Overdosage: Immediately hospitalize patient. Treat symptomatically and supportively. I.V. administration of 1 to 3 mg physostigmine salicylate may reverse symptoms of amitriptyline poisoning. See complete product information for manifestation and treatment.

How Supplied: *Double strength (DS) Tablets,* white, film-coated, each containing 10 mg chlordiazepoxide and 25 mg amitriptyline (as the hydrochloride salt), and *Tablets,* blue, film-coated, each containing 5 mg chlordiazepoxide and 12.5 mg amitriptyline (as the hydrochloride salt)—bottles of 100 and 500; Tel-E-Dose® packages of 100; Prescription Paks of 50.

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In the depressed and anxious patient

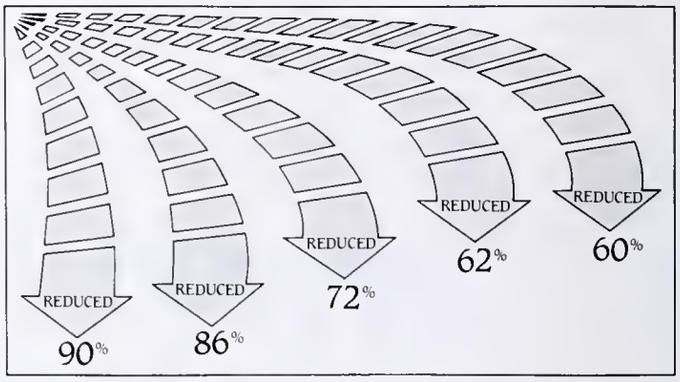
See Improvement In The First Week...[1]

And The Weeks That Follow

- 74% of patients experienced improved sleep after the first *h.s.* dose[1]
- First-week reduction in somatic symptoms[1]

Caution patients about the combined effects of Limbitrol with alcohol or other CNS depressants and about activities requiring complete mental alertness, such as operating machinery or driving a car. In general, limit dosage to the lowest effective amount in elderly patients.

Percentage of Reduction in Individual Somatic Symptoms During First Week of Limbitrol Therapy*



*Patients often presented with more than one somatic symptom.

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Please see summary of product information inside back cover.





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A new acronym: ETs

An urgent message to all of us practicing physicians from AMA President Alan R. Nelson, published in the AMNews of July 7, bears repeating in these pages. We quote:

"To my colleagues:

"This message is to call for your assistance in dealing with a major crisis that confronts us and our patients today.

"Legislation now receiving serious consideration in Congress would have the effect of rationing care for Medicare beneficiaries. We must make sure that this does not happen.

"This legislation masquerades under the term 'expenditure targets' (ETs). It would work like this: The government would allocate a specific amount of money for Medicare reimbursement for physician services during a fiscal year. If total physician reimbursement exceeded that target in any year, fee schedule updates would be — at a minimum — lowered or eliminated in the following year. Reimbursement rollbacks would be a possibility if a target were not met. Physicians could be forced to make medical decisions not on the patient's need for care, but on the availability of funds.

"A slightly different form of rationing already exists in Canada. The result is long waiting lists for many procedures; some of the other procedures in wide use in our country are unavailable in Canada.

"This is bad medicine. We cannot let it happen here.

"The AMA has launched an all-out effort to keep rationing out of this country. If we are to succeed, we need the help of each of you.

"During the AMA Annual Meeting in Chicago (in June), we called on physicians attending the meeting to call their members of Congress and express their concerns about the expenditure target legislation. Hundreds of them did so.

"Now, I am asking each of you to join the battle, and to call on your colleagues to do likewise. I urge you to contact your representatives in Congress immediately and make sure they are aware of the many shortcomings of this (proposed) legislation. . . . I also urge you to make your views known to the White House . . . and to the Department of Health & Human Services Secretary Louis W. Sullivan, MD.

". . . Please let your colleagues who may not be AMA members know that you need them to call their members of Congress. Ask them to join the AMA and make their voices count with yours. . . ."

We envision an uproar of great proportions arising from the ranks of those 65 years old and above, as well as from the AARP, when word gets out to the public, but it behooves us physicians to be the first to ring the bells on the watchtower on behalf of our patients, who will be the ultimate sufferers.

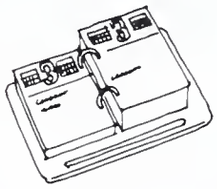
J.I. Frederick Reppun, MD
Editor



The comments in your editorial in the July issue of the Hawaii Medical Journal were read with interest. In that editorial you lamented that physicians were being required by Medicare to sign the attestation sheet in which physicians had to acknowledge that they had been warned of the punishment for falsifying the record. Your comments decried the fact that things had deteriorated to such a state that physicians were being forced not only to endure such an admonition not to cheat, but that they had to sign their names to the fact that they had been so admonished.

When this edict was promulgated by the imperious and anonymous bureaucrats in Washington, D.C., the Hawaii Medical Association did take action in opposition. At the 129th Annual Meeting of the HMA at the Kona Surf Hotel in October 1985, this entire situation was discussed. The HMA resolved that this requirement was odious, onerous and superfluous. Furthermore, the HMA sent this resolution to the administrators of all the state hospitals and to the Hawaii legislators. The resolution was published in the HMA newsletter. Nevertheless, our protests have evidently fallen on deaf ears; the require-

►



Continuing Medical Education

The Hawaii Medical Association does not review or evaluate the programs listed in the Hawaii Medical Journal Continuing Medical Education column and assumes no responsibility for educational value, scientific content, changes in agenda or cancellations.

CALENDAR OF ACCREDITED EVENTS — CATEGORY 1

Accredited programs of CME allow one unit of AMA credit for each hour of instruction excluding all "breaks." Asterisked programs also are accredited for AAFP prescribed credit.

LOCAL ACCREDITED PROGRAMS ONGOING

American Cancer Society, Honolulu Unit

1. Melanoma Skin Tumor Conference, quarterly, March, June, September, December, second Thursday, 12:30-1:30 p.m. Queen's Medical Center, Harkness Dining Conference Room.
 For further information, contact Honolulu Unit 522-0333.

John A. Burns School of Medicine

1. Department of Medicine
 - A. Case Conferences, second and fourth Tuesdays, 12:30-2 p.m., Queen's University Tower, Room 618.
 - B. Grand Rounds, first and third Tuesdays, 12:30-2 p.m., Queen's University Tower, Room 618.
 - C. Endocrinology Grand Rounds, first Tuesday, 5:30-6:30 p.m., Queen's University Tower, Room 506.
 - D. UH-Queen's Conference, every Friday, 8-9 a.m., Queen's Medical Center, Mabel Smyth Auditorium.
 - E. Cardiology Grand Rounds, third Tuesday, 6:30-7:30 p.m., Queen's University Tower, Room 508.
 - F. Infectious Disease Grand Rounds, first and third Thursdays, 5 - 6 p.m., Queen's Nalani 1 Conference Room.
 - G. Dermatology Grand Rounds, second Wednesday, 7:30-9:30 a.m., Queen's Medical Center, Queen Emma Clinic.
 - H. Pulmonary Grand Rounds, fourth Monday, 12:30-1:30 p.m., Queen's Medical Center, Kamehameha Lounge.
 - I. Nuclear Medicine Grand Rounds, third Wednesday, 5-6:30 p.m., Straub Clinic & Hospital, Doctors' Dining Room.
 - J. Medical-Surgical GI Grand Rounds, third Friday, 12:45-1:45 p.m., Kuakini Hospital, PB4 Classroom.
 - K. Rehabilitation Hospital of the Pacific Grand Rounds, first and third Thursdays, 7:30 - 8:30 a.m., Rehabilitation Conference Room, first floor.
 - L. Neurology Grand Rounds, second Thursday, 12:30-1:30 p.m., Queen's Medical Center, Kam Auditorium.
 - M. Geriatric Medicine Journal Club, first and third Wednesdays, 5:30-7 p.m. or TBA, 9th Floor Lounge, HPM, Kuakini Medical Center.
 - N. Radiology Grand Rounds, every second Tuesday, 5:30-8 p.m., Queen's Medical Center, Radiology Classroom.
2. Department of Obstetrics and Gynecology
 - A. Grand Rounds, Wednesdays, 7:30-8:30 a.m., Kapiolani Medical Center for Women and Children, second-floor auditorium.
 - B. Tuesday Conference, Tuesdays, 1-2 p.m., Kapiolani Medical Center for Women and Children, second-floor auditorium.
 - C. UH Conference, Fridays, 2:30-3:30 p.m., Kapiolani Medical Center for Women and Children, second-floor auditorium.
3. Division of Orthopedics
 - A. Fracture Conference, Mondays, 5-6 p.m., Queen's University Tower, Room 618.
 - B. Shriners' Tuesday Conference, Tuesdays, 7:15-8:15 a.m., Shriners Children's Hospital, Auditorium.
4. Department of Pediatrics
 - A. Grand Rounds, Thursdays, 8-9 a.m., Kapiolani Medical Center for Women and Children, second-floor auditorium.
 - B. Monday Noon Conference, 12:45-1:45 p.m., Kapiolani Medical Center for Women and Children, second-floor auditorium.
 - C. Pediatric Infectious Disease Conference, Thursdays, 12:30-1:30 p.m., Kapiolani Medical Center for Women and Children, third-floor conference room.
 - D. Perinatal Grand Rounds, Fridays, 8:15-9:15 a.m., Kapiolani

(Continued on page 359) ►

LETTER TO THE EDITOR *(Continued from page 355)*

ment still stands.

I could not agree with you more that it is a lamentable state when the honorable profession of medicine has been subjected to such insulting treatment; furthermore, I take offense on the behalf of all our parents who brought us up not to be dishonest. I believe that most physicians are scrupulously honest and that our profession is the only profession that is being forced to submit to such ignominy before receiving reimbursement for services justly rendered. Can you imagine what it would be like if nurses or hospital administrators were forced to sign such documentation before they could receive their paychecks every two weeks! The populace would rise up in an uproar to defend the poor downtrodden hospital employees; however, the honorable profession of medicne has meekly, if not quietly, submitted to this abusive treatment.

I would hope that your editorial will produce comments similar to mine. Thank you for your time and attention to these concerns.

John T. McDonnell, MD
Fellow, American Academy of
Allergy & Immunology
Treasurer, Hawaii Medical Association





ROSALYN P. STERLING-SCOTT, M.D.

Assistant Professor of Surgery, UCLA School of Medicine and Drew University of Medicine and Science, Los Angeles

Associate Surgeon, Department of Cardiovascular & Thoracic Surgery, Centinela Hospital Medical Center, Los Angeles

Major, U.S. Army Reserve

EDUCATION Rensselaer Polytechnic Institute, Troy, NY, B.S. Chemistry; NYU School of Medicine, New York, M.D.

RESIDENCY Boston University School of Medicine (Cardiovascular); Saint Vincent's and St. Claire's Hospitals, New York City (General Surgery)

FELLOWSHIP First Mary A. Fraley Cardiovascular Surgical Research Fellow at the Texas Heart Institute, Houston

OUTSTANDING ACHIEVEMENTS Author of numerous articles, including "Indications for Early Bypass Grafting Following Intracoronary Streptokinase"; author of "The Female Surgeon—Dawn of a New Era," chapter in *A Century of Black Surgeons—The U.S.A. Experience*; Board of Directors, Association of Black Cardiologists; Secretary, Drew Society

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Indication: Lower respiratory infections, including pneumonia, caused by *Streptococcus pneumoniae, Haemophilus influenzae,* and *Streptococcus pyogenes* (group A β-hemolytic streptococci).
Contraindication: Known allergy to cephalosporins
Warnings: CECLOR SHOULD BE ADMINISTERED CAUTIOUSLY TO PENICILLIN-SENSITIVE PATIENTS. PENICILLINS AND CEPHALOSPORINS SHOW PARTIAL CROSS-ALLERGENICITY. POSSIBLE REACTIONS INCLUDE ANAPHYLAXIS.

Administer cautiously to allergic patients.

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics. It must be considered in differential diagnosis of antibiotic-associated diarrhea. Colon flora is altered by broad-spectrum antibiotic treatment, possibly resulting in antibiotic-associated colitis.

Precautions:

- Discontinue Ceclor in the event of allergic reactions to it.
- Prolonged use may result in overgrowth of nonsusceptible organisms.
- Positive direct Coombs' tests have been reported during treatment with cephalosporins.
- Ceclor should be administered with caution in the presence of markedly impaired renal function. Although dosage adjustments in moderate to severe renal impairment are usually not required, careful clinical observation and laboratory studies should be made.
- Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.
- Safety and effectiveness have not been determined in pregnancy, lactation, and infants less than one month old. Ceclor penetrates mother's milk. Exercise caution in prescribing for these patients.

Adverse Reactions: (percentage of patients)

Therapy-related adverse reactions are uncommon. Those reported include:

- Gastrointestinal (mostly diarrhea). 2.5%.
- Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment.
- Hypersensitivity reactions (including morbilliform eruptions, pruritus, urticaria, and serum-sickness-like reactions that have included erythema multiforme [rarely, Stevens-Johnson syndrome] and toxic epidermal necrolysis or the above skin manifestations accompanied by arthritis/arthralgia, and frequently, fever): 1.5%, usually subside within a few days after cessation of therapy. Serum-sickness-like reactions have been reported more frequently in children than in adults and have usually occurred during or following a second course of therapy with Ceclor. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.
- Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.
- As with some penicillins and some other cephalosporins, transient hepatitis and cholestatic jaundice have been reported rarely.
- Rarely, reversible hyperactivity, nervousness, insomnia, confusion, hypertonia, dizziness, and somnolence have been reported.
- Other: eosinophilia, 2%; genital pruritus or vaginitis, less than 1%, and, rarely, thrombocytopenia.

Abnormalities in laboratory results of uncertain etiology

- Slight elevations in hepatic enzymes.
- Transient fluctuations in leukocyte count (especially in infants and children).
- Abnormal urinalysis; elevations in BUN or serum creatinine.
- Positive direct Coombs' test.
- False-positive tests for urinary glucose with Benedict's or Fehling's solution and Clinitest® tablets but not with Tes-Tape® (glucose enzymatic test strip, Lilly). [061088L]

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Medical Center for Women and Children, Conference Room B.

5. Department of Psychiatry
 A. Grand Rounds, Fridays, 8-9:30 a.m., Queen's University Tower, Room 618.
 B. Scientific Forum, Mondays, 12:30-2 p.m., Kapiolani Medical Center for Women and Children, Conference Room 626.
 C. Hawaii State Hospital Psychiatry Education Conference, third Wednesday, 10:30 a.m.-noon, Hawaii State Hospital, Goddard Conference Room.
6. Department of Surgery
 A. Grand Rounds, first, second, and third Saturdays, 7:30-9 a.m., rotating hospitals.
 B. Statistical M&M, last Saturday, 7:30-9 a.m., rotating hospitals.
 C. Journal Club, first and third Tuesdays, 6-8 p.m., Queen's University Tower, Room 620.
 D. Medical-Surgical GI Grand Rounds, third Friday, 12:45-1:45 p.m., Kuakini Medical Center, PB4 Classroom.
 E. Pediatric Surgical Grand Rounds, first Friday, 12:45-1:45 p.m., Kapiolani Medical Center for Women and Children, Conference Room B.
 F. Basic Science Lecture, Wednesdays, 7:15-8:15 a.m., Queen's University Tower, Room 618.
7. Department of Pathology
 A. Neuropathology Conference, first Saturday, 8-9 a.m., St. Francis Hospital, Sullivan IV Classroom.
 B. Pathology Grand Rounds, bimonthly, 7:30-8:30 p.m., rotating locations.

For further information on any of these programs, please call the Continuing Medical Education office at 948-6949.

Castle Medical Center

1. CME Programs, first, second, and third Tuesdays, 12:30-1:30 p.m., Castle Medical Center's auditorium.
2. Windward Oncology Programs, fourth Tuesday, 12:30-1:30 p.m., Castle Medical Center's auditorium.

For further information, call Staff Development at 263-5186.

Chart Rehabilitation of Hawaii, Inc.

1. CME Programs, Thursdays, 8-9 a.m. Topics and visiting professorships to be announced.

For further information, or to be placed on the mailing list, contact Comprehensive Health and Active Rehabilitation Training (CHART) at 523-1674.

G.N. Wilcox Memorial Hospital

1. General Medical Staff Meeting, quarterly in January, April, July and October, 7:30 p.m., Hospital Conference Room.
2. Clinical Review, Mondays (occasional Friday), noon-2 p.m., Hospital Conference Room.
3. Journal Club, last Monday, bimonthly (January, March, etc.), Hospital Conference Room.

For further information, call Medical Staff Services, 245-1173.

Hawaii Medical Association

1. HMA Maternal and Perinatal Mortality Study Committee, on an on-call basis. 1360 S. Beretania St., 2nd Floor. (Call 536-7702 to confirm meeting schedule.)

Hawaii Ophthalmological Society

1. Monthly Dinner Meeting, third Thursday of each month (except July, August, and December), 6:30-9:30 p.m., The Pacific Club.

Hawaii Thoracic Society

1. To be announced — Visiting Professorship Program statewide.
2. Sinclair Chest Club Quarterly Dinner Meetings, January, April, July, and October. Call Rosemary Respicio, BSN, at 537-5966 for dates and speakers.

Hilo Hospital

1. Radiology Conference, first Friday, 12:30-1:30 p.m., GC-1 Conference Room.
2. Tumor Conference, second Friday, 12:30-1:30 p.m., GC-1 Conference Room.
3. "Great Case" Conference/Clinical Pharmacology, third Friday, 12:30-1:30 p.m., GC-1 Conference Room.
4. Pathology Conference/Morbidity-Mortality Review, fourth Friday, 12:30-1:30 p.m., GC-1 Conference Room.
5. Visiting Professor/Network for Continuing Medical Education Tapes (ETV), Saturdays, 7-8 a.m., GC-1 Conference Room.

For further information, call Administration at 969-4382.

Kaiser Foundation Hospital

1. Obstetrics/Pathology Conference, first Monday, noon-1 p.m., Moanalua fourth-floor conference room.
*2. Medicine Grand Rounds, Tuesdays, 8-9 a.m., Moanalua Auditorium.
3. Tumor Board, Tuesdays, noon-1 p.m., Moanalua Auditorium.
4. Pathology Conference, first Friday, 11 a.m.-12 noon, Moanalua Conference Room A.
5. Surgical Grand Rounds, Fridays, 8-9 a.m., Moanalua Auditorium.
*6. Family Practice Grand Rounds, fourth Thursday, 7:45-9 a.m., Moanalua conference room C-D.
7. Obstetrics/Perinatal Conference, last Tuesday, 8-9 a.m., Moanalua conference room C-D.
8. Interdepartmental Conferences, third Thursday, every other month (August, October, December), 8-9 a.m., Moanalua Auditorium (call CME office for topic).
9. Network for Continuing Medical Education (NCME) Videotape Program, Monday-Friday, available upon request.
10. Clifford J. Straehley Symposium. September 23, 1989, 11 a.m. to 2 p.m. Moanalua Auditorium.

For further information, call CME Office at 834-9496 for topics.

Kona Hospital

1. CME Meeting, second Thursday, bimonthly (January, March, etc.), 8-9 a.m., Hospital Dining Room.
2. Grand Rounds/Tumor Board, fourth Wednesday, 8:30-9:30 a.m., Hospital Dining Room.
3. Visiting Professor Programs, (For further information, call 322-4429 or 322-4455.)

Kuakini Medical Center

1. Visiting Professor Lectures (ongoing).
2. Guest Lectures (ongoing).
3. Neurology Conference, second Monday, 12:30-1:30 p.m., Resident's Conference Room.
4. Neuroradiology Conference, third Monday, 8-9 a.m., PB-4 Conference Room.
5. Nephrology Conference, third Monday, noon-1 p.m., Resident's Conference Room.
6. Department of Ophthalmology Meeting, first Tuesday, 12:30-1:30 p.m., Private Dining Room.
7. Internal Medicine Study Club, bimonthly second Tuesday, 6-7 p.m., PB-4 Conference Room.
8. Department of Medicine (M&M), fourth Tuesday, 1-2 p.m., Hale Pulama Mau Auditorium.
9. Endocrine Conference, first Wednesday, 12:30-1:30 p.m., Resident's Conference Room.
10. G.I. Conference, second Wednesday, 12:30-1:30 p.m., Resident's Conference Room.
11. Infectious Disease Conference, third Wednesday, 12:30-1:30 p.m., Resident's Conference Room.
12. Oncology Conference, Thursdays, 7:30-8:30 a.m., PB-5 Conference Room.
13. Hematology and Oncology Conference, first Thursday, 12:30-1:30 p.m., Resident's Conference Room.
14. Pulmonary Conference, second Thursday, 1-2 p.m., Resident's Conference Room.
15. Rheumatology Conference, third Thursday, 12:30-1:30 p.m., Resident's Conference Room.
16. Cardiology Conference, fourth Thursday, 12:30-1:30 p.m., Resident's Conference Room.

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17. Surgical Conference, first Friday, 12:45-1:45 p.m., PB-5 Conference Room, (Note: Also fourth Friday, if there are five Fridays in a month.)
18. Nutrition Conference, second Friday, bimonthly 12:30-1:30 p.m., Private Dining Room.
19. Surgical Trauma Conference, second Friday, 12:45-1:45 p.m., PB-5 Conference Room.
20. Surgical Mortality and Morbidity Conference, last Friday, 12:45-1:45 p.m., PB-5 Conference Room.

Maui Memorial Hospital

1. Department of Medicine, first Thursday 7-8 a.m., Auditorium.
2. Department of Surgery, second Thursday, 7-8 a.m., Auditorium.
3. Department of Obstetrics & Gynecology, third Thursday, 7-8 a.m., Classroom #2.
4. Department of Pediatrics, fourth Thursday, 7-8 a.m., Auditorium.
5. Fith Thursday Meeting: 7-8 a.m., Auditorium.
6. Tumor Board Conference; second Friday and fourth Wednesday, a.m., Multi-Purpose Room.
7. Anesthesia Conference, second Wednesday, 7-8 a.m., Multi-Purpose Room.

The Queen's Medical Center

1. Anesthesiology Conference, first and second Wednesdays, 7-8 a.m., Doctors' Conference Room.
2. Emergency Medicine Conference, third Tuesday, 11:30-12:30 p.m., Ultrasound Conference Room.
3. MICU Lecture, Monday-Thursday, 2-3 p.m., Queen Emma Tower Conference Room 4B.
4. Neuro-Radiology Conference, Mondays, 8-9 a.m., Imaging Services classroom, QET #2.
5. Ob/Gyn Conference, every Monday, 1-2 p.m., Kamehameha Auditorium.
6. Ophthalmology Conference, fourth Tuesday, 4:45-6 p.m., Doctor's Conference Room.
7. Orthopedic Conference, every Wednesday, 7-8 a.m., Kamehameha Auditorium.
8. Otolaryngology Conference, first and second Friday, 7:30-8:30 a.m., Harkness Room 139.
9. Pathology Conference, every Wednesday, 7-8 a.m., Queen Emma Tower, fourth floor.
10. Pediatrics Conference, fourth Thursday, 12:30-1:30 p.m., Harkness Board Room.
11. QMC-UH Grand Rounds, Monday, Wednesday, and Thursday, 12:30-1:30 p.m., (Mondays at Kamehameha Lounge and Wednesday, Thursdays at Kamehameha Auditorium.
12. QMC-UH Medical Conference, every Friday, 8-9 a.m., Mabel Smyth Auditorium.
13. Surgical Conference, every Tuesday, 4:30-5:30 p.m., Kamehameha Auditorium.
14. Tumor Conference, every Thursday, 12:30-1:30 p.m., Cafeteria Conference Room.
15. Special Conference: Advance Cardiopulmonary Life Support. For further information, contact Nursing Education 547-4373.
16. Community Consortium of AIDS Physicians in Hawaii. For further information, contact: David McEwan, MD, 537-2211.

St. Francis Medical Center

1. Oncology Conference, Mondays, 7:30-8:30 a.m., Sullivan IV Classroom.
2. EENT Meeting, first Tuesday, 7:30-8:30 a.m., Sullivan IV Classroom.
3. Surgery Grand Rounds, first, second, and third Fridays, 7:30-8:30 a.m., Sullivan IV Classroom.
4. Dept. of Medicine Morbidity and Mortality Conference, first Thursday of each month, 8-9 a.m. Sullivan IV Classroom. (For SFMC staff members only).
5. Dept. of Medicine Conferences, Thursdays, except for first and last Thursdays of each month, 8-9 a.m., Sullivan IV Classroom.
6. Medico-Legal Seminars, last Thursday of each month, 8-9 a.m., L.Q. Pang Auditorium. (Everyone welcome).
7. Hematology Conference, third Thursday, 12:30-1:30 p.m., Sullivan IV Classroom. (Contact the Education Department at 547-6410 if conference is scheduled for the month).
8. Internal Medicine Review series, Monday, Wednesday, Thursday, Friday, 12:30-1:30 p.m., Sullivan IV Classroom. (Contact the Medical Education Office at 547-6497 for specific dates of lectures.)
9. Dept. of Surgery Morbidity and Mortality Conference, last Friday of each month, 7:30-8:30 a.m., Sullivan IV Classroom. (For SFMC staff members only).

Straub Clinic & Hospital

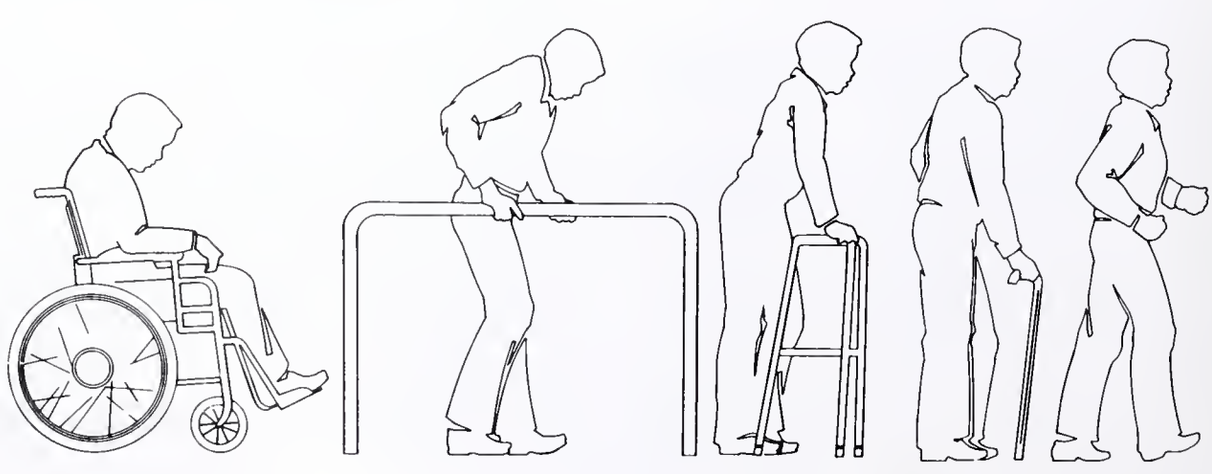
1. Associates Meeting, first Tuesday, 5:30-7 p.m., every other month, Doctor's Dining Room.
2. Burns Rounds, first and third Wednesdays, 4-5:45 p.m., H3 Conference Room.
3. Cardiac Surgery Conference, fourth Tuesday, 4:30-5:30 p.m., Doctors' Dining Room.
4. Fluorescein Angiography Conference, third Thursday, 4:30-5:45 p.m., First Interstate Center, Room 950.
5. Friday Noon Conference, Fridays, 12:30-1:30 p.m., Doctor's Dining Room.
6. Gastroenterology Journal Club, fourth Tuesday, 5-6:30 p.m., 4th Floor Conference Room.
7. Neuropathology Conference, fourth Saturday, 8-9 a.m., Doctor's Dining Room.
8. Patient Care Conference, second Tuesday, 5-6 p.m., Doctor's Dining Room.
9. Surgical Morbidity and Mortality Conference, fourth Tuesday, 7-8 a.m., Doctor's Dining Room.
10. Video Conference, first Thursday, 12:30-1:30 p.m., Doctors' Dining Room.

For further information, call the Office of Professional Activities, 522-3151.

Wahiawa General Hospital

1. CME Program, Tuesdays, 1-2 p.m., SNFI Dining Room. For further information, call the Medical Staff Services Office at 621-8411.

Note: All conferences are subject to change. Monthly calendars are available upon request.







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HMJ Reports

Hibakusha '89

The 5-doctor team from the Hiroshima Prefectural Medical Association was in Hawaii in early July, for the 7th time since 1977, to examine the Hibakusha, the survivors of the atomic bomb (Gembaku = atom explosion) of 1945 that precipitated the ending of World War II. This time it was Dr. Katsumi Hirata who led the team together with Drs. Chikako Ito, Keigo Dote, Hideo Sasaki and researcher Tadaaki Watanabe. These visits have been conducted every 2 years.

The team was honored by the HMA, sister association to the HPMA, at a luncheon at its 1360 South Beretania Street home on Wednesday, July the 5th. The team had arrived in Honolulu on the Monday before, went over to Maui to examine the Hibakusha residing there, on Thursday at the office of HMA member Steve Moser, and returned to conduct the Oahu examination on Saturday and Sunday mornings at Hale Pulama Mau of Kuakini Medical Center. The team had already been to Seattle, where they had examined Hibakusha from the Pacific Northwest and also some from Canada. They then stopped at San Francisco and at Los Angeles to do the same. The Hibakusha who returned to the United States after WW II are called Kibei; those that returned to Canada are called Kika.

We had the opportunity of volunteering to assist in the examinations at Kuakini on Sunday morning (taking blood pressures), together with Katsuhiko Yano, MD, and under the aegis of George Suzuki, MD. The Friends of the Hibakusha under the presidency of Mr. Izumi Hirano and secretary Mae Oda had organized an efficient system of walk-through stations, with the help of many volunteers from the community and from KMC.

We learned quite a bit that was new knowledge.

Thanks to the interest of the news media, and particularly by the TV stations, excellent coverage encouraged some 30 Hibakusha to report in for the first time ever. We can understand that many had withdrawn from exposing their experience — their exposure to radiation — for fear of recrimination and loss of benefits that runs as an undercurrent in our society; this is the same sort of all-too-common a human attitude that ostracized lepers a hundred years ago, and that has reared its ugly head more recently, once more, as a result of the epidemic of AIDS.

While measuring the systolic and the diastolic, we were able to listen to such stories. Now, 44 years later, those who were infants, teenagers and young adults at the time of the gembaku, are showing up at the examinations here, as well as the elderly. Several had not been near the hypocenter beneath the airburst, but had gone into the city to help search for relatives within 3 days after, coming in from the outskirts, or from other cities. On returning home to the U.S. after the war, the Hibakusha, most of them American citizens, quickly learned that instead of awarding them Purple Hearts and badges of courage, this country made no effort to assist or support them in their future lives.

From the medical team we learned that within 3 weeks people were returning to the devasted city and putting up shelters and beginning to rebuild the city. At present, a geiger counter would reveal no radiation emanating from any part of the area. The reason for this is that the airburst emitted gamma and alpha rays, to the extent of over 400 rads within a radius of 1.2 miles, rapidly declining with distance from the hypocenter, and with time. There was little particulate matter encompassing strontium-90, e.g., with a half-life of 400 years, or plutonium, 250,000 years, that lingered in the area. This would have been far different had the A-bomb exploded on or beneath the surface of the ground.

The consequent increase in the rate of cancers has varied: Leukemia peaked at 5 years, gastric cancer for a longer period of time. Multiple Myeloma, however, is still on the increase.

We also learned a bit about the change in medical practice in Japan: How the small private hospital owned by the Sensei is gradually going out of style; awareness of malpractice is rising. Interestingly, however, lawyers are few and far between; most law school graduates go into business and the bar examinations are so stiff that few practice before the bar. In addition, the Japanese people still revere their physicians as "sensei" or teacher, the professor, whose dictum is not to be challenged. Our Western "informed consent" has wiped out a similar attitude of years past in this country!

A great many physicians in Japan belong to the "anti-nuclear bunch" — naturally! We look forward to meeting the friends of the medical team from Hiroshima that we met here this time, and previous times, when we attend the 9th Congress of the International Physicians for the Prevention of Nuclear War (IPPNW) in Hiroshima and Nagasaki October 6 to 13 this year.

J.I. Frederick Reppun, MD
Editor

Injection injuries of the hand: Caveat doctor

Robert E. Atkinson, MD*

Airless gun injection injuries of the hand are a surgical emergency. The injection of paint or paint solvents are the most pernicious, whereas grease or diesel fuel injections have a better prognosis for the victim. Tissue necrosis and subsequent morbidity results from the diffusion of the noxious substance. Solvents and paint generate the most severe inflammatory response. Prompt major surgical treatment can minimize morbidity.

Introduction

The injection of paint, paint solvents, grease or diesel fuel into the hand by an airless gun means a forced pressure of 140 to 700 kilograms per square centimeter[1]. On the victim's presenting to the emergency room, a small puncture wound usually is apparent on the tip of the index or long finger (Fig. 1). While these injuries initially have a benign appearance, they are notoriously dangerous and often result in severe disability. I present a case history in order to illustrate the serious nature of such injuries. The biochemical, histologic and clinical aspects of these injuries are discussed. Prompt referral for major surgical treatment is mandatory. Gangrene of the digit and significant morbidity of the hand is not uncommon after such an injection injury, even in spite of immediate surgical debridement.

Case Report

A 35-year-old right-handed Korean male painter, in the course of cleaning his spray gun with turpentine, accidentally injected turpentine into the palmar aspect of his left index fingertip (Fig. 1). Within 2 hours of the injury, the patient presented himself to the emergency room. The chief complaint at that time was pain in the index finger and hand. His past medical history was unremarkable. On examination, the left index finger was painful to palpation and hypesthetic. Flexor and extensor tendon function was intact. Swelling was minimal in the index finger and hand, and no erythema was apparent. There was capillary refill present in the index fingertip. Initial hematocrit and white cell counts were normal.

The patient was taken directly to the operating room and under a general anesthetic, the index finger and left palm were opened and debrided under tourniquet control. The finger and hand wounds were irrigated with 3 liters of saline. No paint particles were seen, but a turpentine smell was noted when the palmar portion of the wound was opened. Aerobic and anaerobic cultures were taken. The flexor tendon sheath was opened, debrided and irrigated. The finger and hand wounds were left open and a sterile dressing and splint were applied. At the end of the procedure, the index finger was pink, capillary refill being present. Cultures taken at the time of operation later yielded no growth.



Figure 1: A typical entrance wound can be seen at the tip of the left index finger.

Over the next 3 days, the patient complained of increasing hand and left arm pain. On the 3rd post-injury day, axillary lymphadenopathy and lymphangitis of the left

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Honolulu, Hawaii 96813



Figure 2: Note the left arm and forearm swelling with severe lymphadenopathy and lymphangitis three days after turpentine injection injury.

forearm were noted (Fig. 2). Capillary refill of the index fingertip was poor and the finger had a dusky appearance. White blood cell count was 13,000 with 28% bands. The patient was febrile up to 102 degrees. Blood cultures were taken and were subsequently reported as showing no growth.

On the 5th post-injury day, the patient was returned to the operating room. The gangrenous index finger was amputated (Fig. 3). The wrist, proximal forearm and dorsum of the hand were incised and drained; liquefaction necrosis of the subcutaneous fat was noted. Gram stains were negative and subsequent cultures yielded no growth. A carpal tunnel release was performed; forearm and interosseous muscle fasciotomies were done. There was no necrosis of the forearm nor of the intrinsic muscles of the hand. The wounds were irrigated with 6 liters of saline and all the wounds were left open. The patient's fever subsequently abated and his lymphadenopathy was resolved. Histologic examination of the amputated index finger showed an inflammatory arteritis with necrosis of the adventitia and a heavy leukocyte infiltration; acute panniculitis and fat necrosis were also noted.

On the 9th post-injury day, the hand and forearm wounds were closed, using split-thickness skin grafts. At one year post-injury, the patient demonstrated good motion in the middle, ring and small fingers of the left hand but sensibility (2-point discrimination) was decreased in the thumb and long fingers (Fig. 4, 5). Weakness in grip and pinch persist, but chronic pain is not a problem. Job retraining is in progress and the patient's return to work as a painter is doubtful.

Discussion

Biochemical Aspects:

The serious nature of high-pressure injection injuries to the hand has been documented in the literature[1,2,3,4,5,7]. On initial presentation to the emergency ward, the entrance wound and hand appear deceptively benign. Early, aggressive, wide debridement of these injuries is the treatment of choice[5,6,7]. The prognosis is worse in the instance of paint and turpentine injections; it is better in the case of grease or diesel-fuel injections[4,5]. Injection into a digit carries a worse prognosis than injection into the palm. The time from injury to treatment has been found to be an important prognosis factor[5,7].



Figure 3: Turpentine and solvent injections usually produce gangrene of the finger, inspite of irrigation and debridement on the day of injury.

Paint is composed of three functional components: (1) The vehicles, (2) the solvents and (3) the pigments. In one animal study, soya alkyd (a vehicle) produced the greatest inflammatory response, followed by turpentine and xylol (both solvents)[1].

Turpentine (industrial white spirit) is an oleoresin derived from coniferous trees, especially the long-leaf pine (Pinus Terebinthus). Distillation of the resin yields a volatile mixture of oil and resin that are alkylated aromatic hydrocarbons. Their property of dissolving fat is used to advantage in solvents and cleaning agents. The solvents in paint cause a more intense inflammatory response and more tissue damage than do just paint or grease[6,8]. The most potent inflammatory agents are mineral spirits (turpentine) and other hydrocarbon solvents[5,9]. Solvents cause a severe inflammatory reaction and rapid tissue necrosis (especially of fat) with an accumulation of sterile pus. Veins and arteries thrombose and myelin sheaths may dissolve, causing severe injury to nerves. Paint solvents have a lower viscosity than paint itself and,

►

therefore, spread much further from the site of injection [3,4]. This may explain the extensive hand and distal forearm inflammatory reaction in our patient.

Fevers may result from systemic absorption of the solvents[4,10].

Injections seem to occur most commonly on the preaxial (radial) side of the hand with the index finger being the most commonly involved digit. This area drains into the cephalic and axillary lymph nodes, whereas lymph from the ulnar digits drains into the epitrochlear and axillary lymph nodes.

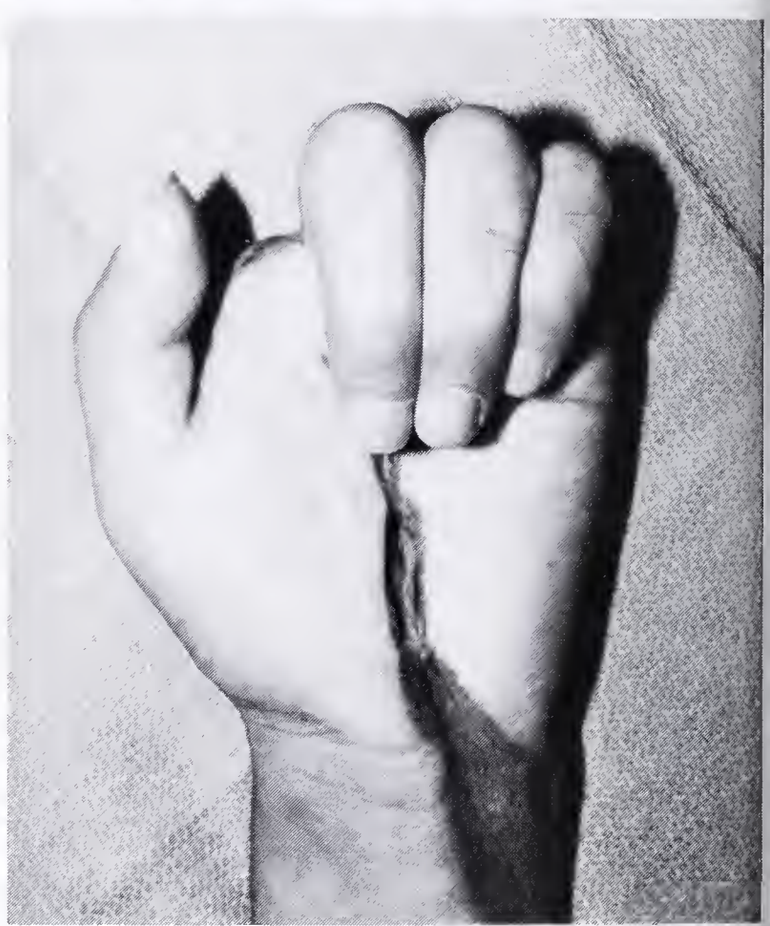
Physical Aspects and Natural History:

The spread of the noxious agent is a function not only of its viscosity but is also the result of the pressure that the injecting gun delivers. These tools deliver pressures in the range of 140 to 700 kilograms of force per square centimeter, at rifle velocity[2,10,11,12]. The force expended by the injection gun is proportional to 1/2 muzzle velocity squared (MV^2). Thus a tripling of the velocity gives a ninefold increase in the force of injection with a resultant wider dispersion into the tissues. The gun does not have to be in contact with the skin at the time of injury. The subsequent inflammation and necrosis result from the wide dispersion of the noxious substance rather than from the pressure generated by the gun[12,13].

Paint or turpentine injections cause severe pain within hours of the injury. In a histologic study of tissues damaged by such injections, Dickson noted necrosis of the skin and subcutaneous tissues, fat loculi devoid of all structures, perineural fibrosis, and digital artery thrombosis due to an inflammatory reaction[4]. Turpentine has a direct destructive action on the architecture of fat cells. Fatty acids, cholesterol, glycerides and waxes have all been identified in the liquefaction necrosis associated with the acute inflammatory stage of acral turpentine injection [4]. Digital necrosis (gangrene) is the rule in solvent injection injuries.

If survival of the tissue around the injection site occurs, this acute stage leads to the development of oleomas and oleogranulomas. A third phase, or chronic state, with draining sinuses around granulomas, develops late after paint injection injuries. The sequelae of injection injuries in a chronic state include skin necrosis and breakdown, tumor masses (oleomas), fibrosis with decreased digital motion, chronic lymphedema, and peripheral neuropathy. Morbidity of the hand can be significant and is determined by the site of injection, the material injected and the time lapse before surgical exploration.





Figures 4, 5: Appearance and digital motion one year after turpentine injection injury. Note skin grafted onto areas of the previous decompression.

Principles of Treatment:

A review of published reports emphasizes the following treatment principles:

1—Early and adequate surgical therapy contributes to preservation of function and prevents needless disability; decompression of the digit and palm must be performed in the instance of paint injections, whereas wider exploration is necessary for solvent injections.[5,13,14]

2—The use of local anesthetic in the emergency room worsens the prognosis and is, therefore, contraindicated; hot soaks to the affected part are also contraindicated.

3—Tetanus prophylaxis and prophylactic antibiotics should be given.

4—Irrigation of the injured tissues may be of value especially if the paint is water soluble.

5—Wide exploration is essential, especially for paint or solvent injections.

6—Parenteral analgesics are necessary for patient comfort.

7—X-rays if the hand and arm may aid in planning the extent of surgical exploration, if paint pigments are visible.

8—A local decompression in the emergency room is contraindicated; referral for major surgical treatment is

(Continued on page 395) ►



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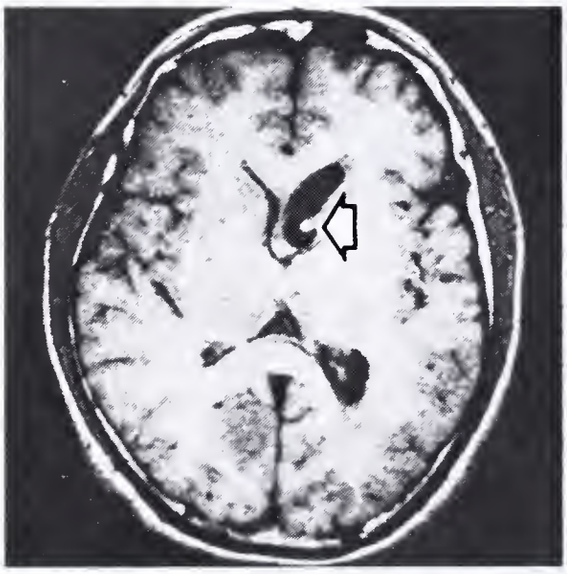
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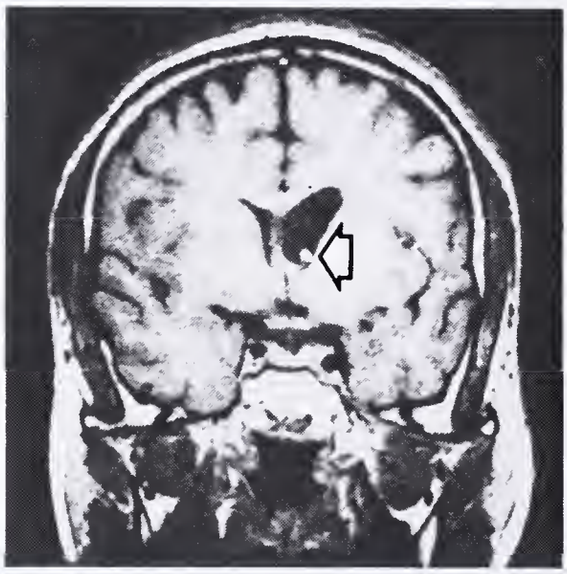
MRI CASE OF THE MONTH

CYSTICERCOSIS

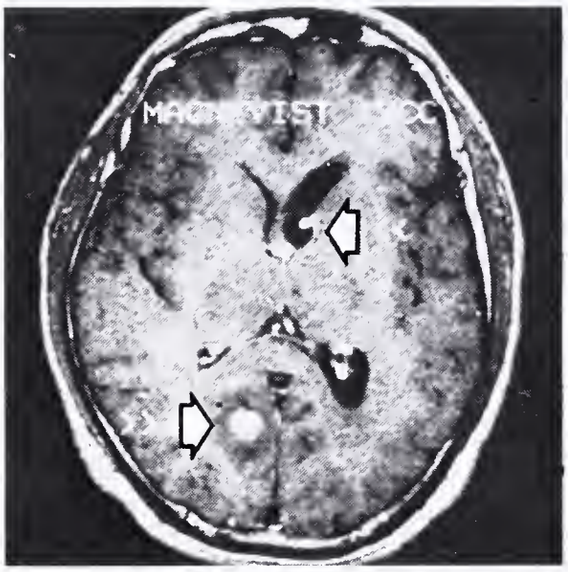
Clinical History: Five year history of grandmal seizures.



#1



#2



#3



#4

Radiologic Diagnosis: Images #1, 2, and 3 show a cystic mass obstructing the left foramen of Monro with mild ventricular dilatation. There is a subtle area of decrease signal in the right occipital lobe which has central enhancement with Magnevist on image 3. Image #4 shows an area of signal void in the left convexity consistent with calcification. **Diagnosis:** Cysticercosis with three stages of disease. 1. Intraventricular cyst, scolex. 2. Inflammatory response to dead parasite. 3. Calcified remote lesion.

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Therapeutic use of anti-Rh (D) immunoglobulin in thrombocytopenia

Robert T.S. Jim, MD*

Anti-Rh (D) immunoglobulin (RhoGAM, Johnson and Johnson, Diagnostics) has been used for idiopathic thrombocytopenic purpura (ITP)[1]. This report explores its further use in thrombocytopenia of various etiologies.

Materials and Methods

RhoGAM was given 15 times to 8 patients with thrombocytopenia of various etiologies: 1-4 cc i.m. in single or repeated doses (up to four times). In 10 of 14 administrations, significant improvement occurred in platelet counts (71%) (see table). No responses were seen in 4 administrations (Cases 2, 7, 8). The time to maximum rise in platelet count after administration of RhoGAM occurred from 1 to 30 days later, mostly in 1 to 8 days. The duration of improvement lasted for 1 to 240 days, mostly lasting 1 to 43 days. The degree and duration of improvement in platelet count was not dose related. The largest dose given (4cc) resulted in no improvement (Case 7). Bleeding times were not tested in these patients.

Discussion

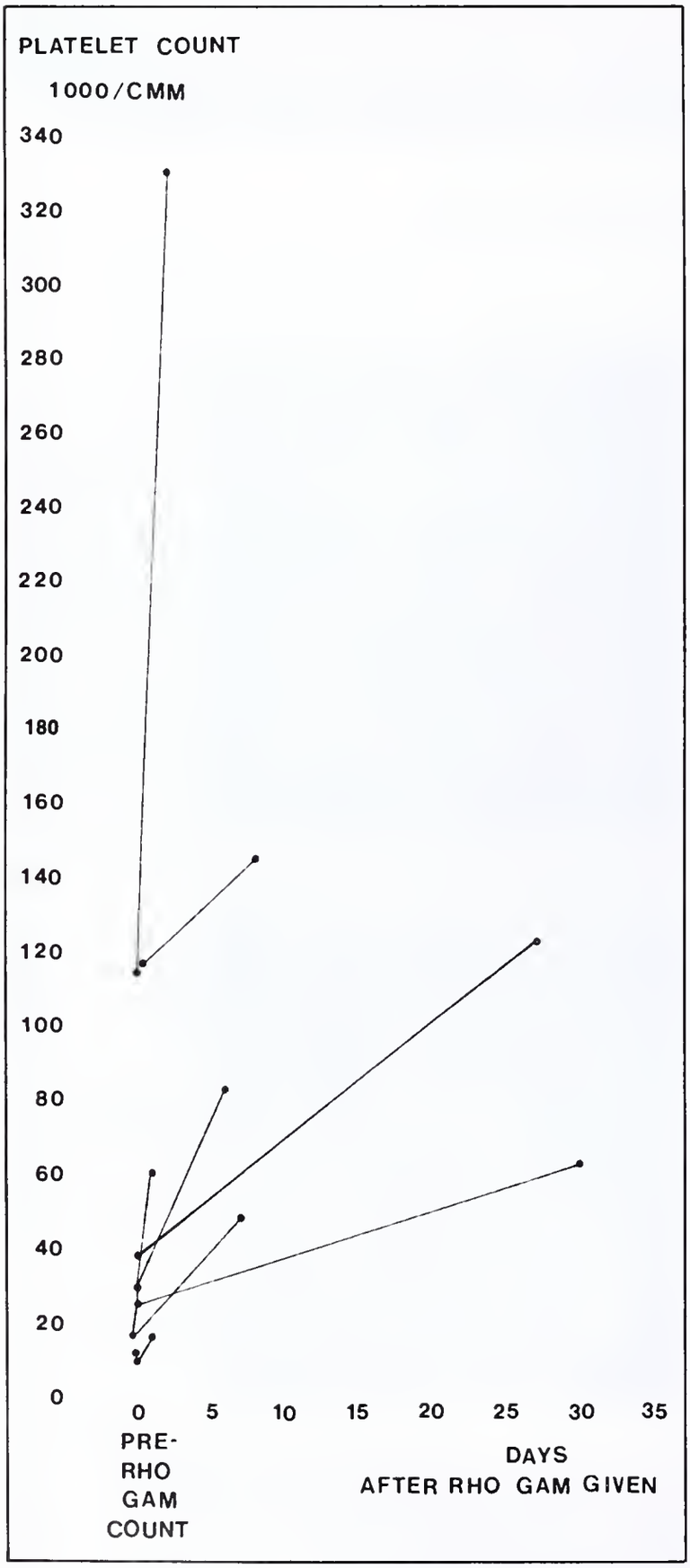
RhoGAM can improve the platelet count in ITP[1-5]. It is also effective in human immunodeficiency virus (HIV)-related thrombocytopenia[6]. RhoGAM can also improve and enhance the response to and effect of donor platelet transfusions given to patients with aplastic anemia who are refractory to such transfusions[7].

In our report, significant increases in platelet count occurred in patients with ITP. In one patient, the count returned to normal (Case 8). As little as 300 mcg (1cc) dose was effective (Case 1); better results were not obtained with larger doses. Responses usually occurred within a week, but were not long lasting. In a few, no response was apparent (Cases 2, 7, 8). Patients may have

Clinical, Laboratory and Treatment Data on Use of Rho GAM

Case No.	Initials	Age	Rho GAM cc Given I.M.	Pre-treatment Platelet Count cmm	Maximum Rise in Platelet Count–cmm	Days to Achieve Maximal Rise	Duration of Response Days	Diagnosis
1	E.S.	41	1	36,000	132,000	20	39	Idopathic thrombocyto-
			2	24,000	28,000	5	2	penic Purpura (ITP)
			1	20,000	unknown	unknown	unknown	
2	J.G.	78	2	18,000	9,000	-----	-----	Metastatic renal CA
3	C.H.	52	1	29,000	65,000	30	240	ITP
			2	40,000	125,000	27	43	
4	H.L.	86	2	11,000	18,000	1	1	Myelodysplastic syndrome
			3	13,000	62,000	1	8	CA of uterus
5	A.B.	62	3	32,000	85,000	6	22	ITP
6	A.C.	53	3	18,000	50,000	7	2	ITP Chronic renal failure
7	D.B.	80	4	16,000	5,000	-----	-----	Drug immune thrombocytopenia
8	Y.H.	83	3	116,000	335,000	2	21	ITP
			3	117,000	146,000	8	12	Diabetes mellitus
			3	97,000	45,000	-----	-----	Recurrent DVA
			3	27,000	6,000	-----	-----	

* Professor of Medicine
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Honolulu, Hawaii



become refractory to repeated doses of RhoGAM, possibly due to antibody development against RhoGAM.

In all of the patients given RhoGAM in this study, none of the complications such as fever, sepsis or hypersplenism occurred. No patient received transfusions of blood or blood products at the time RhoGAM was administered.

Response to RhoGAM has been reported with low[3] to medium doses[8]. In a patient with AIDS-related thrombocytopenia, response was obtained only when higher doses were used[5].

As a result of this small study, it appears that RhoGAM has a transient platelet-improving effect in ITP similar to that obtained with other immunoglobulin agents such as i.v. gamma globulin. However, data are insufficient to determine which agent is more effective in intensity and duration than the other. Biniek et al.[9] reported in a patient with AIDS-related thrombocytopenia that RhoGAM was more effective than i.v. gamma globulin. In the Oksenhendler et al. study[6], the response rate to HIV-related ITP was in the range of that obtained with high dose i.v. IGG. Randomized controlled studies comparing both agents in the treatment of ITP have not been done.

RhoGAM appears to be useful as an agent adjunctive to other immunosuppressive agents in the management of ITP and other immune thrombocytopenias. ■

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The National Association of Life Underwriters (NALU), one of the oldest and largest trade organizations in the insurance field, celebrates its centennial birthday this year, marking 100 years of service to both consumers and professional life insurance agents.

Since its founding in 1890, NALU has played a vital role in developing legislation to protect policyholders and maintain a healthy and well-regulated insurance marketplace. It has also initiated numerous education programs to improve the public's understanding of life insurance and provide guidance to consumers when choosing a life insurance policy.

Today, more than 140,000 career life insurance agents belong to local member associations of NALU. Membership in these life underwriters' associations enables agents to become more proficient in their job, achieve the highest standards of professional conduct and ethics, and participate in service projects aimed at making their communities a better place to live.



NALU had its beginnings in Boston where a small group of concerned life insurance agents met to discuss proper and fair business practices and ways of improving the lot and statute of agents. The association's founders were particularly troubled by the practice of insurance rebating, which had become rampant after the Civil War.

By the early part of the 20th century, nearly every state had passed legislative prohibitions on rebating.

In 1905 NALU also helped to enact many insurance reforms to correct abuses, and a year later NALU's officers were the only representatives of the life insurance business asked to participate in the Chicago Conference, called by President Theodore Roosevelt to design model insurance regulations.

Through the efforts of life underwriters, many states adopted laws to assure the integrity of the marketplace. Through their insistence, licensing standards and regulatory legislation now exist in all states for the protection of consumers from the inept, the ill-informed and the unscrupulous.

Leading figures in NALU founded the American College of Life Underwriters in 1927, establishing the Chartered Life Underwriter (CLU) designation as the premier mark of professionalism in the field. In 1947, NALU co-founded the Life Underwriter Training Council (LUTC), which has provided instruction to thousands of agents eager to improve their skills.

In 1956 NALU and the American Council of Life Insurance created the prestigious Louis T. Dublin Public Service Award to honor local life underwriters' associations that best exemplify NALU's public service motto, "People helping people." NALU has encouraged thousands of agents to become involved in such worthy causes as the March of Dimes , Medic Alert International, American Cancer Society, Special Olympics and the American Heart Association.

In addition, local associations have conducted drug abuse prevention programs, worked with juvenile offenders, conducted blood pressure screening clinics, supported the homeless and assisted the elderly. A number of local associations also sponsor a service known as SCHIC, Senior Citizen Health Insurance Counseling, which provides the elderly with free counseling, and NALU's community outreach programs have been recognized nationally by many service organizations as well the White House. In 1988 President Reagan awarded NALU the distinguished Presidential Award, one of only 30 such awards presented that year for outstanding public service.

FRONT COVER: Hawaii State Association of Life Underwriters commemorates 100 years of service by NALU, the National Association of Life Underwriters. Top photo is a view of Honolulu, circa 1889, taken from Punchbowl. Lower photo is the same view today.

It's a whole new ballgame

The Tax Reform Act (TRA) of 1986 brought both bad news and good. The bad news is that many deductions have been curtailed or eliminated so that, even with low tax rates across the board, some taxpayers will pay higher taxes. Tax shelters have been particularly hard hit, with restrictions on deductions for passive income. The good news, however, is that some tax breaks still exist.

Congress did not change the tax treatment of life insurance policies in the TRA. This means that "inside buildup," the cash that accumulates in a whole life policy over its lifetime, continues to be tax-deferred. If that cash value is taken upon the death of the insured, it is not subject to income tax. If taken before death, it is taxed only to the extent that it exceeds premiums paid into the policy.

While life insurance is not an investment as such, and should be bought primarily for protection, it does have investment characteristics.

- *Variable life insurance* offers lifetime insurance with level premiums but with a death benefit that may increase or decrease (to a contractually guaranteed minimum), depending on the performance of the portfolio in which the funds are invested. Policyholders frequently have a choice among stock and bond funds, real estate, etc.
- *Universal life insurance* accumulates cash value in the policy based on current market rates of return, which can go up or down; it is particularly attractive during high-interest-rate periods. Both premiums and death benefits may be adjusted periodically by policy-owners to meet their needs.
- *Variable universal life insurance* combines the investment characteristics of variable life with the flexibility of universal life. Its flexible premiums may be invested in stocks, bonds, real estate, money market funds, or combinations thereof. Investment yields are used to increase both the policy's death benefit and cash value.
- *Single premium life insurance,* whose benefits may be fixed or variable, offers the opportunity to make a one-time payment for a life insurance policy with a great deal of flexibility. Tax-deferred cash values build in accordance with current market rates. However, withdrawals and loans can trigger substantial tax liability.
- *Annuities,* like whole life, also retain tax advantages under TRA 1986. There is no limit on how much you can contribute in any one year, unlike Individual Retirement Accounts, and interest accumulates on a tax-deferred basis. Annuities and whole life may substitute for an IRA, if you are no longer eligible under the new rules.

Family Income Splitting

Once upon a time, saving for a college education followed a tried-and-true pattern. Parents would invest any spare funds in their children's name, so that interest and dividends would be taxed at the children's income tax rate. Since that rate was typically lower than the parents' rate, funds could accumulate considerably faster.

Now two things have happened to change the rules:

Tax brackets have been reduced so that there are effectively just three brackets: 15 percent, 28 percent and, due to a surcharge on certain taxpayers, 33 percent.

The unearned income of children under age 14 is now taxed at their parents' highest rate.

Unearned income of children 14 or over, on the other hand, is taxed at their own tax rate. It still makes sense, therefore, to transfer some assets to children. Here are some points to consider:

- The first $500 of any youngster's unearned income is not taxed at all. The second $500, even for an under-14 year old, is taxed at the child's own rate. This means that a youngster can accumulate up to $1,000 in interest or dividends in any one year before being taxed at the higher, parental rate. It takes approximately $12,000, earning 8 percent, to produce $1,000. As long as your youngster's nest egg is under $12,000, taxes shouldn't be a problem.
- It will take more than $12,000 to pay for college. The way to amass larger sums, and still steer clear of the tax rap, is to invest in things that are either tax-free or won't throw off much income until later on.

One possibility is good old U.S. Government EE-bonds. They are free of state income tax, which can help if you're in a high-tax state. More important, tax on the accumulated interest can be deferred until the bonds are redeemed; at that point your college-bound youngster, no matter how bright, will be past 14 and therefore taxed at his or her own rate.

Municipal bonds might also do the trick. Another possibility is common stock with low current dividends but good appreciation potential.

Life insurance purchased on the life of a juvenile can offer advantages that children will never be able to provide for themselves: such benefits as tax deferred accumulations, an immediate estate and a rate guaranteed to be lower than policies purchased later in life.

What is Section 89?

There has been a lot of talk lately about a new employee benefit law called "Section 89," which went into effect Jan. 1, 1989. Section 89 refers to a provision in the 1986 tax reform act that requires company benefit plans to meet new "nondiscrimination" rules.

Although most employees won't notice any difference in their benefits as a result of this new law, you may feel its effects if you are at the upper or lower end of the corporate totem pole.

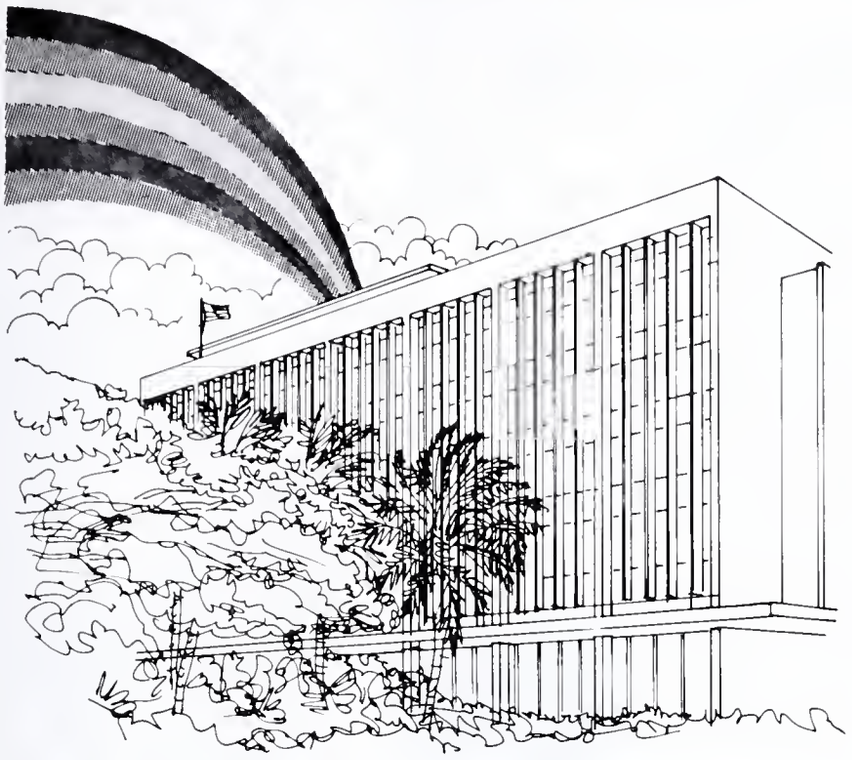
Basically, the new laws says that if an employer offers benefits such as health care, life insurance, dependent care and educational or legal assistance, he must treat all his employees equally. He can't discriminate in favor of highly compensated individuals (such as corporate executives) by offering them substantially more benefits than the company's rank-and-file.

In order to insure uniformity of benefits, every company benefit plan must now meet rigorous new nondiscrimination tests as well as a qualification test.

If your company's plan is found to discriminate in favor of highly compensated employees, you may have to pay income tax on the value of any "excess benefits" you receive.

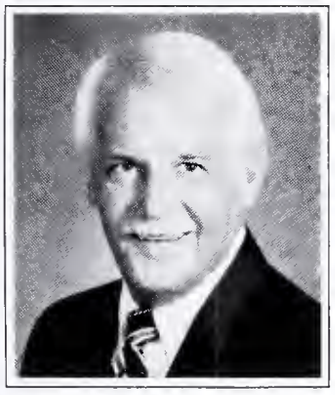
Generally, this only affects those who earn more than $78,353 annually, or earn more than $52,235 and are

(Continued on page S-6)



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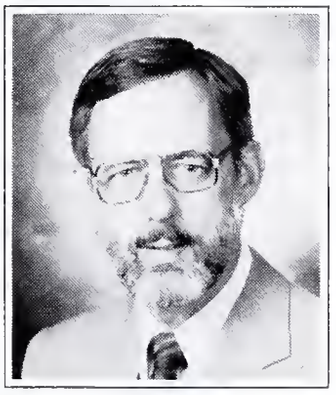
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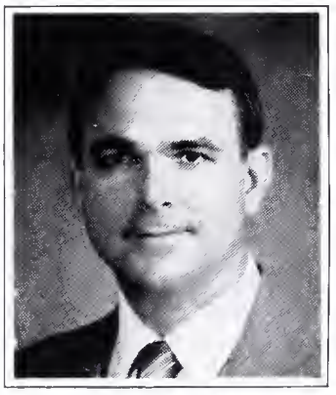
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NEW TAX LAW

(Continued from page S-4)

ranked among the top 20 percent of employees by salary. But you could also be affected if you are an officer in your company or own more than 5 percent of it.

If you are a top employee, and your company decides not to conform to the new Section 89 requirements, you will have to pay taxes on the value of that portion of your benefits that is considered discriminatory.

If you are not a top employee, you need not worry about additional tax liability. In fact, you may see some improvements in your benefits as a result of the new law. That's because many employers will opt to spread benefits more evenly among their employees if their plans fail the tests. The result will be that those on the lower rungs of the corporate ladder will get nearly the same benefits as those at the top.

Credit Insurance

If you've recently bought and financed a car, or made another major purchase, you've probably been asked to buy credit insurance.

This is the insurance, typically offered along with installment loans, that pays off the loan in the event of the borrower's death or disability.

Credit insurance clearly benefits the lender, because the loan will be repaid no matter what happens to the borrower. But does it benefit you, the borrower?

Before you accept credit insurance, these are the things you should know:

1. Credit insurance is usually optional. Lenders may insist that you need it, trying to pressure you into making the purchase, but they can't force you to buy. Don't be pressured. Take the time to think about whether or not you really need cash insurance.

2. Credit insurance adds to the cost of the loan. Usually expressed as cents per $100 of the face amount of the loan, with maximum premiums set by each state, the national average cost is around 60 cents per $100. Put another way, credit life insurance adds about 1 percent to the interest rate of a loan, and credit disability (or accident and health) insurance adds about 2 percent.

3. Credit insurance is term insurance. Credit life insurance, specifically, is usually written as declining balance term insurance. The coverage starts with the face amount of the loan and declines as the loan is repaid; the premiums, meanwhile, remain fixed. But credit insurance usually costs more than term insurance bought from an insurance agent.

You may want to consider credit insurance if:

- You are either in poor health or elderly, so that regular life insurance would be either unavailable or very expensive.
- Your family will be heavily burdened by paying off a combination of debts.
- You want to cover a small short-term loan, so small that a commercial insurance company will probably not be interested.

If you decide to buy credit insurance, compare prices carefully and understand what you're buying.

Wife Insurance

Janet and Rob are young marrieds, with a brand-new baby. Janet is planning to give up her job and stay home for several years and raise a family. If Rob becomes the sole support of his growing family, he clearly needs insurance on his life.

But what about Janet? Conventional wisdom says life insurance is only for breadwinners.

But life insurance also serves needs in addition to income replacement, and Janet, too, needs life insurance. If she should die, especially if she should die while the children are preschoolers, Rob would face the need for costly child care.

What's more, until Janet leaves work she should think about disability income insurance.

This is the insurance that protects you from income lost through accident or illness. Both Janet and Rob should consider individual policies if they are not covered adequately on the job. Policies should define customary occupation and should cover accident and sickness.

Janet and Rob should also give some thought to health insurance coverage. While working, Janet has health insurance on the job. If she leaves her job, she has three options. She can purchase an 18 month ex-

(Continued on page S-11)

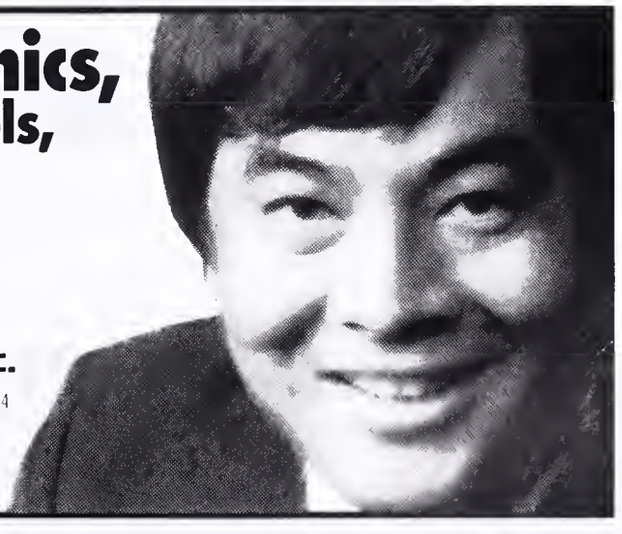
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When Art Snyder died, he left property worth $150,000. But he didn't leave a will. So the state stepped in and determined who got what. In the state where Art lived (the rules vary from state to state), the result was that his wife got $50,000, his married son got $50,000, and his teenage daughter got $50,000, to be administered for her by a court-appointed guardian. According to his wife, this is not what Art intended to have happen.

Rule No. 1 of estate planning: Write a will.

Regardless of how much or how little property you have, writing a will is the only way to have a say in who gets what. It's also the only way to name the individual ("executor") who will handle your affairs and distribute the estate. And it's the only way to select a guardian or guardians to care for the person and property of any minor child.

A husband and wife should each have a will. Both wills should specify what happens if an heir dies before you do or simultaneously, and should name secondary beneficiaries.

Both wills should be reviewed regularly, especially if you become a parent, retire, move to another state, divorce, remarry, or do anything at all that could affect the distribution of your estate and the validity of your existing will.

Rule No. 2: keep taxes on your estate to a minimum.

Under current rules, estates of up to $600,000 may be transferred free of federal estate tax. If the estate is left to a spouse, there is no ceiling; any and all amounts pass free of tax. But this doesn't mean that you should forget about taxes. Many states tax smaller estates. And, with the escalating value of real estate and pension accumulations, surprising numbers of middle-income people have estates exceeding $600,000.

Trusts, whether testamentary (taking effect at death) or inter vivos (a "living" trust taking effect as soon as it is established), can help to minimize taxes. Trusts may be revocable or irrevocable.

An attorney can help you determine which type of trust, if any, if most appropriate.

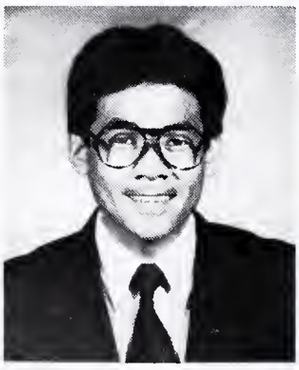
But don't be blinded by the wish to save on taxes. Don't tie your survivors' hands and keep them from using money they may need. As an estate planning tool, life insurance does two things: It creates an "instant estate." And it provides readily available funds to take care of uninsured medicals bills, funeral costs, and income taxes so that your survivors don't have to liquidate other investments at what may be an inappropriate time.

Charitable Giving

Have you been working for your local hospital? Raising money for a favorite charity? Devoting effort to your alumni association?

If you'd like to buttress those efforts by making a monetary gift, consider a gift through life insurance.

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. . Do you have a financial plan?

You may not be able to afford a large cash gift right now. And you may not want to designate an outright cash gift in your will, if it's money your family might need. But you can create a substantial gift worth far more than you might otherwise be able to give by making relatively small premium payments over a period of time on a life insurance policy.

It can take as little as $500 a year to create a $25,000 gift, for example, or $2,000 for a $100,000 gift.

That policy might be a traditional whole life insurance policy or one of the new interest-sensitive policies. It might require premium payments for a lifetime or it might need only a few years of premiums until accumulated dividends take over to fund the insurance.

If the insurance policy is designated as an outright gift, with the charity as both owner and irrevocable beneficiary, you will receive a current income tax deduction for the annual charitable gift that, in turn, funds the premium payments.

From your favorite charity's point of view, the advantages are significant:

- The charity will receive a sizable gift from you that it otherwise would probably not receive.
- The amount of the gift, once the policy is purchased, is guaranteed. It won't fluctuate, as it might if it consisted of a stock portfolio.
- If the policy is an outright gift, the charity has access to the cash value even during your lifetime.
- Death proceeds of a life insurance policy are not subject to federal income taxes, so the charity will receive the entire face amount of the policy.
- Life insurance proceeds do not pass through probate, so the charity avoids both time and cost in collecting the gift.

Planning a Family?

How does a quarter-of-a-million-dollar baby sound to you? Ridiculous? Well, a baby born this year may well cost that staggering sum to raise to the age of 18 — and *then* you might face the cost of college.

If you're thinking about starting a family, you're probably not thinking at all of the related costs. But precious bundles do cost precious bucks, and it's a good idea to go into parenthood financially aware.

Exactly how much you'll spend depends on a number of factors, including where you live and how many children you have. But economists calculate that raising a single child absorbs about a quarter of a family's lifetime income. The costs include both direct maintenance costs and what economists call "opportunity" costs.

Direct costs, of course, are easily measurable; they come right out of your pocket. Opportunity costs are somewhat less tangible; they represent the opportunities for economic betterment that may be lost such as when a

(Continued on page S-10)

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mother stays out of the work force or takes a part-time job.

Direct costs include a range of expenditures:

• Childbirth itself costs about $3,000 or $4,000, depending on where you live and whether or not the delivery is routine.

• Maternity clothes, nursery furniture, and a layette can cost varying amounts, depending in part on your willingness to accept hand-me-downs. Infants don't wear much, but they do need diapers. And $10 a week for disposable diapers — forget everything else — brings the yearly total to $520.

• Food is another matter. Small children don't eat much, but just wait until the teen years.

• Shelter won't add anything to your budget, at least at first when you can easily put a crib in a corner of another room or convert your den to a nursery. But growing children may mean a growing need for more space. That space, as housing costs increase, may put a sizable dent in your budget.

• Education is another matter. Public schools may be just fine with you, but what about music lessons, gymnastics, and all the other finer things of life?

Then there's summer camp, a necessity for working parents. And year-round child care, equally a necessity where younger children of two-income families are concerned.

Any cost may be worth the joy your newborn will bestow. But consider the costs carefully before you leap into parenthood.

Is An Annuity In Your Future?

The traditional annuity contract is the opposite of a life insurance contract. Instead of paying regular premiums toward the day when benefits will be paid to your survivors, you pay toward the day when monthly distributions will be made to you. Today's annuities, in addition to providing these monthly distributions, offer competitive yields and tax deferement as well.

An annuity may be immediate, starting as soon as you pay the premium, or deferred, starting at a designated later date. The premium may be a single lump-sum payment — either cash out of your pocket or a rollover from an IRA or pension plan — or it may be made in periodic installments.

Earned interest accumulates tax-free until you start to receive benefits.

You may select a fixed annuity, providing the certainty of fixed payments throughout your lifetime. Or you may select a variable annuity, with payments above a guaranteed minimum level dependent on investment return.

Life and Divorce

Sam and Joanna have been married for 18 years. For most of those years, Sam has been the breadwinner and Joanna has tended to the children and home. As a conscientious husband and father, Sam has carried substantial life insurance, with Joanna as his beneficiary.

Now they are getting a divorce.

Life insurance should always be reviewed periodically to make sure that it is still meeting your needs, that amounts of coverage are up to date and that beneficiaries are correctly designated. And life insurance should definitely be reviewed in connection with any major life event. Divorce is a prime example.

Here are some pre- and post-divorce considerations:

• *Beneficiary designations.* Sam's primary beneficiary, in all the years before he contemplated divorce, was Joanna. He certainly doesn't want proceeds to go to an ex-spouse (unless, of course, such a distribution is part of the divorce settlement; see below), but it can happen. It can happen if Joanna is specifically named and he forgets to make a beneficiary change when it's appropriate to do so. If his beneficiary designation simply reads "wife of the insured" and he is divorced with no new wife, the secondary beneficiary will receive the proceeds.

• *Policy ownership.* Rights to Sam's life insurance policy may be transferred to Joanna as part of their property settlement and as a way to ensure the continuation of alimony payments. Transfer of an existing cash value policy, however, may entail sizable federal gift tax. Alternatively, Sam could (1) take out a new cash value policy with Joanna as owner; (2) not transfer a policy at all, but provide that his estate must use the insurance proceeds to continue alimony payments after his death; (3) have Joanna buy a new policy on Sam's life; she can make the premium payments herself or have the divorce agreement specify that he is responsible for making the payments. (4) If the policy is transferred prior to final divorce then there is no gift tax problem because transfer is between spouses.

• *The single parent.* Joanna still has young children at home and wants to be sure that those children are financially protected.

Although Sam's insurance still names the children as beneficiaries, she recognizes that she should have insurance on her own life as well.

College Financing: What's New

College, not surprisingly, costs more than ever. How can you meet these costs? The best is a combination of grants and loans during the college years, and planning ahead during the years before college. In both areas, the 1986 tax law makes some changes.

Planning ahead is still the most advisable course. Money saved at regular intervals while your children are young will ease the out-of-pocket burden associated with the college years. Even at relatively low interest rates, steady saving with a compounded return builds to large sums.

Once again, the new tax law makes some changes. Trusts of all kinds are ruled out for college savings because funds in the trust are now taxed at the donor's rate. The popular custodial accounts are similarly ruled out, with one exception: Money put in custodial form for a child age 14 or over will be taxed at the child's rate. This rate, even if the child is earning money, will probably still be less than the parent's.

There are other attractive savings options. One of the best may be life insurance. Insure the bread winning parent when a child is very young, and sizable earnings to assist with college tuition will have accumulated before the first payment is due. In the event the insured dies, the face value of the policy paid to the beneficiary will help meet college costs. If the insured is disabled, the cash value is still available. Unlike other financial programs, a properly designed life insurance plan can guarantee the funds for your child's college education.

(Continued from page S-7)

tension under the Consolidated Omnibus Budget Reconciliation Act (COBRA). Or, she can get coverage under Rob's employer's group plan. But, Rob's employer's plan isn't as good as it might be, and there are gaps in coverage. So, a third option might be to take Rob's group plan and consider supplemental health insurance. A major medical policy with a large deductible wouldn't cost much and would help to fill the gaps left by Rob's group coverage.

How Much Is Enough?

Before you purchase life insurance, these are the things to consider:

• *The extent of your financial responsibilities to other people.* These responsibilities will change over time as, for example, children grow up and become self-supporting. While they are small, and require full-time care, you may want to aim at providing three-quarters of current family income.

• *The kind and amount of other resources.* Make a list of everything that will be available to your family, including Social Security survivors' benefits, pension and profit-sharing proceeds, a spouse's income, investment income, and the investment return from the proceeds of any existing individual or group life insurance.

• *The specific financial needs your family will have,* including:

—Money to pay funeral expenses, to cover probate fees and estate taxes, and to settle any debts (uninsured medical and hospital bills, outstanding consumer loans, etc.).

—Money for housekeeping and child-care costs in a family with young children.

—Educational funds for children.

—Replacement income for the surviving spouse.

Determining how much life insurance you need means deducting the sum total of income from existing assets from the sum total of your family's ongoing financial need. It also means calculating the impact of inflation and building in enough "extra" to counteract inflation's effects.

It may seem complicated, but it's an exercise that's well worth doing.



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Medical expenses are *major* concern

Do you know that if you're between the ages of 35 and 65, your chances of being unable to work for 90 days or more because of a disabling injury or illness are far greater than your chances of dying?

Have you thought about where the money will come from to pay for food, the mortgage, and all the other costs of living should you become disabled and unable to work?

Most of us give little thought — too little — to these questions.

Your employer may provide some sick pay or disability benefits. Your state may have some disability benefits as well. Social Security provides long-term benefits, starting after the sixth month, for people with permanent or indefinite disabilities.

Buying disability insurance

In comparing disability income policies, consider the following:

- How is disability defined in any policy you are considering?
- How long after the onset of disability do benefits begin? The longer you choose to wait, as a rule, the lower your premium.
- Benefits can be paid for as little as one year or as long as to age 65 (or, if you're still working full time, under some policies, to age 72). The shorter the benefit period, the lower your premium. This isn't necessarily a good place to save money, however, since you are more likely to need income replacement in the event of long-term disability.
- Benefits are usually limited, so that income from all sources (including this policy) total no more than 60 to 70 percent of your gross salary.
- Policies can cover disability resulting from accident or sickness or both. Your best bet is probably a more inclusive policy.
- Some policies include cost-of-living adjustments, raising benefits to keep pace with inflation.
- Renewability provisions vary from policy to policy.

Long-Term Care

One of the greatest expenses that families of the elderly and infirm can face is the cost of chronic illness. Generally, neither traditional health insurance policies nor Medicare will pay much of anything toward the cost of long-term care in a nursing home or at home. Yet a nursing home can cost well over $20,000 a year. At-home care is less costly, but still adds on.

Today many states are taking steps to make sure some form of long-term care is available to the elderly.

The time to purchase either nursing home or at-home insurance, of course, is before you need it. In considering this kind of coverage, however, be sure to ask some *specific* questions:

- When do benefits begin, how much will they be, and how long will they last?
- If you should be in and out of a nursing home, what conditions must be fulfilled for part or all of the scheduled benefits to be available again?
- Does the policy exclude pre-existing conditions or bar coverage for specified conditions? (Some, for example, won't cover the costs associ-

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ated with Alzheimer's disease.)

- Does the policy cover custodial care, such as help with meals or with bathing, as well as skilled nursing care?
- Does the premium remain the same once coverage begins, or increase along with your age? Does the policy include a waiver of premium so premium payments stop once benefits begin?
- What happens if you move to another state, one where your policy may not be sold, after you've started paying premiums?

Post-Retirement Coverage

The best time to think about the health coverage you will need after 65 is long before you reach 65, while still covered by on-the-job group health insurance and while you have more options. Here's what to do:

- If you can't continue the group plan, ask if you can convert it to an individual plan. The individual premiums will be higher, but you won't have any lapse in coverage and you won't have any wait before pre-existing conditions can be covered.
- Find out whether you can get additional benefits under the company policy.
- Several months before you reach age 65, makes sure that your Social Security records are in order and that you apply for Medicare. Benefits are not automatic. If you do not sign up for Medicare Part B (medical insurance) when you first become eligible, you may do so only during the first three months each succeeding year. You'll also pay more with each succeeding year.
- Medicare's coverage is limited to the United States. If you plan to do much traveling, be sure that you have private insurance.
- Consider buying a supplemental policy to pick up Medicare's deductible and co-insurance payments. An important consideration is spouse (under age 65) coverage. That person is not eligible for Medicare, and most companies won't write an individual policy above age 60.
- If you retire before you are eligible for Medicare a company with at least 20 employees, the company must offer continuation health insurance for up to 18 months.

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Bob Hamilton, CLU

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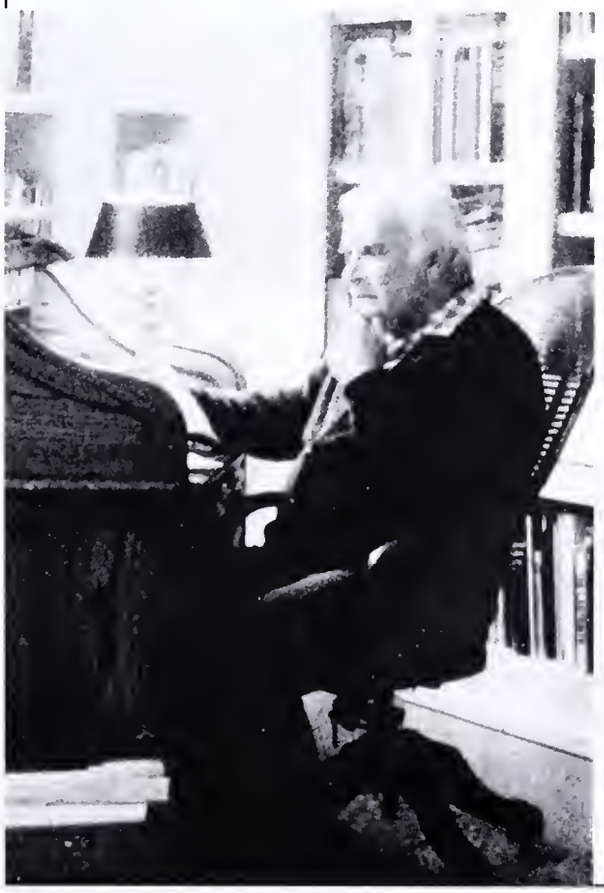
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The State of Insurance in Hawaii

By Robin Campaniano
State Commissioner of Insurance

By any measure, insurance is a big business, and a rather significant part of the Hawaiian economy. I oversee this industry with a staff of about 40 employees, plus several consultants, and an operating budget of about $1.5 million. We are responsible for monitoring the solvency of insurance companies. We have rate oversight authority. We regulate company admission into the state and on occasion, facilitate the entry of an insurance company into the Hawaii market. For instance, we were successful earlier this year in securing the entrance of a company that specializes in motorcycle insurance. We regulate and monitor agents, and we also conduct examinations of domestic insurers and agencies. We have begun expanding our examinations beyond a financially based exam to something called market conduct: We want to make sure that consumers are treated fairly in the marketplace.



Campaniano

So Far

Perhaps I should give you a little background on the insurance industry in Hawaii to put things in perspective.

- The insurance industry has annual premium revenue of about $1.5 billion.
- Insurance companies invest between $4 and $6 billion in the state.
- There is approximately $40 billion of life insurance in force in Hawaii, or about $110,000 per capita. This compares with about $82,000 per household nationwide.
- Approximately 785 insurance companies are authorized to sell insurance in the state, and 24 of them are domestic insurers.
- We have about 6,000 licensed agents, and it is estimated that there are 10,000 employed by the insurance industry in the state.
- Roughly $60 million in premium taxes are generated by insurance companies annually, making this one of the largest sources of tax revenue for the state.

As a result of 1400 pages of legislation, Hawaii has a revised, comprehensive insurance code, one of the most modern codes in the country, if not the most modern.

There has not been an increase in workers' compensation insurance since 1983. Since that time we have reduced rates by a combined 34.5 percent. Additionally, a request for an additional rollback of 2.6 percent is sitting on the table waiting for my action. Since 1983, rates across the country have increased, probably close to 100 percent. We've gone the other way, and decreased rates at least 34 percent.

Since about the time I took office, we've rolled back homeowner's insurance by 27 percent, including a rollback of tenant's insurance by 46 percent. Fire insurance has also seen base decreases, of 2.9 percent and 14.7 percent in the past few years. We have fairly stable rates in general liability and have managed to hold the line in medical malpractice insurance.

Though no one likes to pay their auto premiums, as high as they look, our rate of increase is one of the lowest in the country, far below the national average.

Hawaii is now recognized by observers as a prime captive domicile, one of the best in the world. A captive is basically a subsidiary of a parent formed with the purpose of providing insurance to the parent.

Observers have indicated to us that there are five prime locations to domicile a captive: Luxembourg, Bermuda, Vermont, Singapore and Hawaii. We currently have 10 captives domiciled here, including those of Duty Free Shoppers, Bank of Hawaii, and Pacific Telysis, the parent company of the California and Nevada Bells.

Upcoming

I have some major concerns about the future of insurance and insurance regulation:

Prop 103. Last fall, the California voters approved Proposition 103. It mandated an across-the-board 20 percent rate rollback, changed the commissioner's position from an appointed to an elected one, drastically altered consumer involvement in the rate-making process and allowed banks to sell insurance, as well as an array of other changes.

Nevada recently passed a similar law, and 14 other jurisdictions also face similar legislation. I understand the consumer frustration with the insurance industry and believe that this wave of consumerism is sending clear messages to the industry. However, I am concerned that such attempts at reform like 103 will have the opposite of the intended effect, and add costs and bureaucracy to an already burdened industry.

Federal regulation. There will be attempts to move towards federal regulation of insurance. We commissioners have been making the trek up Capitol Hill to argue that the states prefer 50 monkeys rather than one gorilla, and that we states can do a better job of regulation than can the feds.

Consolidation of the financial industry. I believe that we will see a gradual blurring of the lines that currently separate banks and insurance companies and securities dealers. We have seen attempts here to permit banks and trust companies to sell insurance, and perhaps it is only a matter of time before they are granted such powers.

Solvency, and Medical Insurance. As medical costs skyrocket, so to will the cost of medical insurance, and indications I see on the Mainland lead me to believe that a potential crisis lurks just around the corner. One commissioner has stated that 17 out of 17 HMOs in his state are technically insolvent. Fortunately, I do not believe we will face such a problem in the near future in Hawaii, but one never knows.

Rates and Availability. We have ridden the crest of a stable insurance market in Hawaii, with rates being low and rather stable. However, insurance is essentially a cost transfer mechanism, and as underlying costs rise, invariably so too will insurance rates. It simply costs more money to fix automobiles — and human bodies — and until we remove drunk drivers and cure the common cold, costs will have to rise, and with them, insurance premiums.



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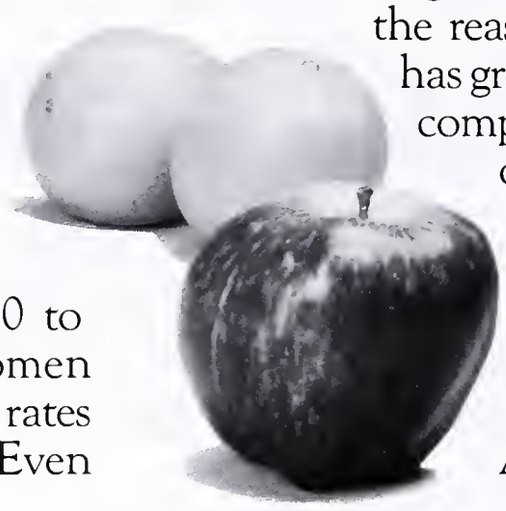
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Conference Report

The Power Of The Art: Humanism, Healing & Health Care

The Sheraton Kauai at Poipu
June 4-9, 1989
Sponsored by The Kauai Foundation for Continuing Education

David Elpern, MD, chairman of the KFCE, was the initiator and sparkplug of the project to put on a conference that would emphasize and recall the non-technological aspects of medical care in this day and age of "high tech." He started the planning over two years ago and elicited the support of the two co-chairmen of the conference, one from the Far East, **Richard Ratzan, MD**, of the University of Connecticut School of Medicine, and one from the extreme western USA, **Frederick Reppun, MD**, editor of the *Hawaii Medical Journal.*

The Project Coordinator, without whose yeoman efforts and expert coordination the conference could not have proceeded as smoothly as it did, was **Michelle Long**; she organized a large corps of volunteers that helped with all the minutiae — the lubrication for the meshing gears of success.

It started out on Sunday with a delightful Aloha Sunset Reception on the lawn fronting the rocky shoreline and the pounding surf of the makai portion of the hotel, bordered by the Beach Naupaka vine and under the waving coconut palms. We faced South and West and watched the sun set in a blaze of color as we met and talked to each other in small groups, faculty and guests together, and crowded around the open-air bar and the tables of luscious pupu.

Hours later (the sun seemed to be delaying its descent to below the horizon of dark blue Pacific waters for our sakes), we were treated to the charm and wit of master of ceremonies **Richard Selzer, MD**, as he introduced Kauai **Mayor JoAnn Yukimura**, who graciously welcomed us all to "her island" and expressed pride in what the KFCE was doing for Kauai. Seltzer's "oration" followed: *The Surgeon Turned Writer,* much to the delight of the audience as he quipped and quoted peripatetically across the field of medicine.

(We were too much engrossed in the words of the eminent speakers to be taking notes as a reporter of the conference, so the following is somewhat sketchy, as we tried to jot down the pearls of wisdom imparted by the greats.)

Day One: The Art of Healing

Monday morning started off with a bang and set the tone of the entire week. Chairman **Christian Gulbrandsen, MD**, acting Dean (appointed a week later by the Board of Regents as THE Dean) of the Hawaii School of Medicine (we were told that 20 to 30 medical students were attendees, most of them from the JABSM in Honolulu!) first introduced Hawaii's dynamic State Director of Health **John Lewin, MD.** Jack poured forth his invariably optimistic and visionary concept of Hawaii as being the health center of the world, particularly since the recent session of the State Legislature had enacted a comprehensive medical care law to cover all in the "gap group" who had not been covered by any insurance program heretofore — the first state in the Union to do so. He emphasized Hawaii's highest longevity statistic as evidence of the health of our people. Jack had to rush off immediately after he spoke, in order to attend a prestigious world conference on AIDS in Montreal.

David Elpern followed with his view of what society needs, what patients need from medicine and what medicine needs in order to bring back the "hands-on" empathy for the sick, the injured and the disabled. **Chris Gulbrandsen** then presented a warm picture of what he saw in the future of medical care by the educating of all in our society who are interested in serving their fellow human beings, starting very early in secondary schools and branching out into a choice of the great many vocations in the health-care field, from aide, to technician, to nursing and to the specialties in medicine, before choosing one.

Chris then introduced the early big guns of the conference, starting with **Howard Spiro, MD**, of Yale, whose topic of *The Power of the Placebo in the Art of Healing* revealed an interesting new concept of the placebo. It is not simply a blank pill or potion, but a real medication or prescription by the physician that he knows is innocuous at best, maybe not actually helpful, but can tide the patient over until he heals himself. "Placebos treat the illness, *not* the disease," said Spiro. He went on to ►

develop this theme: "The physician can practice despite blindness, but he cannot do so if he is deaf," again pointing out the great importance of the "history taking" versus looking at X-ray films, CT-scans, EKGs, lab reports, etc. "The visual aspect of modern medicine is being overemphasized over the auditory — the careful listening to the patient," he said. He even went so far as to wonder whether the CABG may sometimes be a "placebo"! In essence, Spiro the wise went to the heart of the whole POTA conference: "The science of medicine versus the physician's intuition."

Spiro was followed by **Jeanine Young-Mason, EdD, RN,** a professor at University of Massachusetts School of Nursing at Amherst. Describing the inner meaning of the Kurosawa movie epics, *Akohig'e* or *Red Beard,* and *Ikiru,* she illustrated her topic of *The Power of Compassion and the Art of Nursing* by this means. Both films were later shown during the conference, under her direction, with powerful effect.

Our own Professor Emeritus in the Department of Religion at the University of Hawaii, **Rev. Mitsuo Aoki, PhD,** then captivated the audience of some 450 registrants, by gestures rather than by elocution, how one can approach an ailing human being and provide solace and comfort through opening "a room or a cave in one's chest next to the heart and allowing the patient, and God to come to that patient's rescue, within that same chamber."

Tall, bearded like Moses, with a balding dome, a ready smile and a powerful voice, **Andrew Weil, MD,** was the last speaker of the morning. He came from the University of Arizona where he is a lecturer in the Division of Social Perspectives in Medicine and is well known for his many writings and talkings. He challenged Spiro to a duel over the latter's distinction between illness and disease, goodnaturedly of course, and the audience was delighted at the interchange. The title to his talk: *Medical Hexing/Medical Healing: The Art of using Suggestion and the Placebo Response* should give the reader a general idea of the gamut of his exposition based on his own practice and his teaching of medical students. He focused on the physician and his consciousness in terms of the physician's impact on his patient. He spoke of the "New Think," i.e. (a) that the Universe is uncertain, (b) the mystery remains mysterious, (c) cause and effect are not valid statements in that they are forever being skewed by new experiments — the example being the variation in blood pressure readings between those taken by the MD, by the RN or by the patient himself at home — and (d) our consciousness affects our vision and all our senses. He gave interesting examples from his personal research and experiences. He defined placebos more specifically than did Spiro by differentiating an "active placebo" as doing some good through the psyche perhaps, as compared with the textbook placebo that has a common connotation of "sugar pill." He indicated that he is partial to the thought that beliefs and expectations can actually have objective effects on living cells.

What a remarkable and auspicious morning session it was on Day One!

Day Two: The Pleasure and Pain of Caring

Rich Ratzan moderated this morning with a brief introduction, allowing the big guns to continue to fire away.

Leading off was Mihaly with the unpronounceable last name of **Csikszentmihalyl, PhD,** a research psychologist, educator and noted author from the University of Chicago. His talk was particularly interesting in view of the breadth of medical knowledge now facing students aspiring to become doctors. Graphically Csik defined the conflict as pitting challenges versus skills, as going off the deep end of boredom versus the satisfaction of experiencing the "flow" of progress — attitudes that can lead to severe anxieties on the part of students and graduates. Most interesting was his revealing that one of his favorite duties was to interview incoming medical students and to help warn off those who might not be able to cope with the discipline. His topic was titled *The Flow of Healing — Sources of Joy and Energy in the Practice of Medicine.*

Csik was followed by **Sara Charles, MD,** also from Chicago but Professor of Clinical Psychiatry at the University of Illinois. She is a prestigious reviewer for *JAMA* and well known for her book *Defendant: A Psychiatrist on Trial for Malpractice, a personal experience.* Her topic was *Practicing Medicine in a Climate of Litigation.* We had never heard a more lucid description of how all this litigious arena had evolved! Her initial premise was that the FTC in 1983 had forced the AMA to modify its Principles of Medical Ethics, thus "de-professionalizing" us all. The profession had not stood up to its basic principles; admittedly it may not have been able to do so. She concluded with an indisputable truth: "Litigation is bringing down the good doctors; it has done very little to resolve the 'small' problem of actual malpractice by a relatively few incompetents. Medical practice without risk is no fun!" She deplored the settling of claims "without prejudice," when actual justice has not been served and the defendant has been so traumatized that the payoff is a relief — of sorts! Unfortunately, Sara had no remedies to offer us.

John-Henry Pfifferling, PhD, was the third and last speaker of the morning. He came from Chapel Hill in North Carolina, an anthropologist with a bent in studying the behavior of modern man, rather than ancient fossils. He has devoted his time lately to enhancing the self-care skills of professionals in the health field. As if to show off his youthful approach, he leaped down from the dais, brought the mike and himself closer to the audience and at their level. His announced topic was *Things I Wish They Had Taught Me in Medical School.* Having done research on a thousand physicians and others who had become impaired by the stress of their lives, he founded the Center for Professional Well-being. He has also inspired in the curriculum at UCLA School of Medicine a course on the "uncertainty" of medicine, in order to alert budding MDs to be aware of what's in store for them: "To be forewarned is to be forearmed!"

Meeting the challenge of Day One, Dick Selzer managed neatly the final panel of the speakers who responded to questions and statements from the alert audience, so ►

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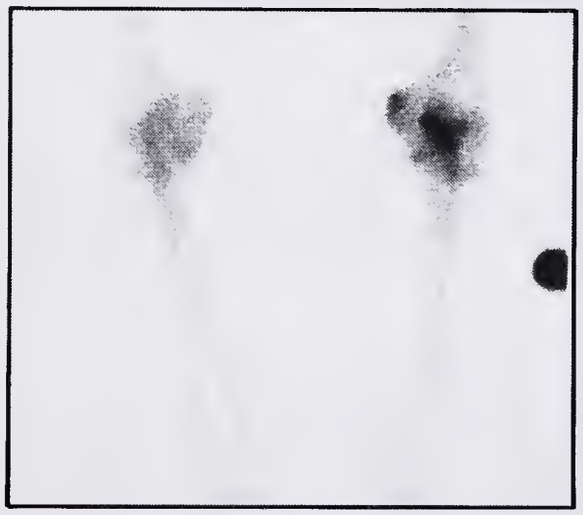
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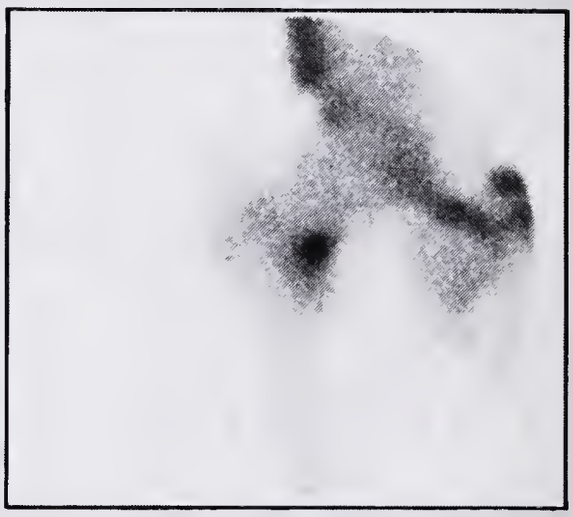
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that we adjourned marveling at how Day Two kept up the pace.

(We left POTA in the afternoon in order to go fetch the Sidels from Honolulu, where Vic spoke to a PSR and PsySr audience in the evening at St. Peters Episcopal Church. This meant skipping all the goodies in the way of workshops, etc. on Tuesday. However, we were back early the next morning.

We need to state an aside at this point: Perhaps not the major impact of POTA, but certainly high on the list of great benefits, were the many opportunities to meet fellow registrants from East and West, North and South; to sit and eat meals with individuals of both the faculty and the registrants and to talk with them during the all-too-short breaks, as well as before and after the sessions.)

Day Three: Communication

Andrew Weil was the MC for the morning. The first speaker was **Howard Beckman, MD,** a professor at Wayne State School of Medicine in Detroit, who addressed the subject of *Does the Practitioner Matter?* His field of interest was in behaviors that help the physician and his patient communicate well with each other, communication between practitioner and patient being the overall focus of the day's sessions. We felt his talk was more in the nature of an exposition geared to medical students: A taste of the new curriculum.

He was followed, along the same vein, by **Aaron Lazare, MD,** chairman of Psychiatry at the Massachusetts Medical Center and the author of a forthcoming book devoted to the medical interview. Naturally, therefore, Aaron chose as his topic *Shame & Humiliation in the Medical Encounter,* again following the theme of POTA throughout: The importance of "listening to the patient" and "how the listener, the professional, must be aware of his or her own feelings while intervening and understanding," as he or she listens and interprets. It is usually a humiliating experience for the patient to reveal the innermost; "all illness is humiliating," Lazare said. (This reminded us how Mits Aoki countered the patient's humiliation by "making a chamber next to his own heart" into which to welcome the patient.)

The Relationship Between Culture and Conversation in Medical Care was the topic chosen by the next speaker: **Richard Frankel, PhD,** Associate Professor of Medicine, also at Wayne State. He pointed out the role of cultures and social interactions that influence the medical interview, (starting out by saying that he himself had been one among eight teachers in a school for disturbed students, 80% of them Blacks, in New York City). Using the new medium in teaching, Frankel ran videos of doctor-patient interviews. The impact on the audience was remarkable. Frankel could not have made his point better had he attempted to interview a live patient on the stage! The videotape presents it so much better and without embarrassing patient or doctor "in person." What was even more interesting was that the first encounter was reviewed by the resident doctor in the video much later, after he had matured and learned from experience and "practice," and then realized the fumbling ineptitude shown all too vividly on the tape. Both patient and doctor had given Frankel permission to use the taped interview in teaching.

Joanne Trautman-Banks, PhD, was the last speaker of the morning. She was the first Professor of Literature in an American Medical School, at Penn State. She chose *Funny Bones: Healthcare and the Comic Spirit,* meaning that comedy and laughter are handmaidens to healing, even in the face of tragedy.

As on the day before, we were unable to attend a choice of workshops in the afternoon, but elected to attend a "revival" meeting with **Patch Adams, MD,** that evening. He labeled his presentation *Magic Elixirs of Life* (but could just as aptly have given a lecture on Lydia E. Pinkham's Vegetable Compound for Tired Women — and sold gallons of it!).

A tall, loose-jointed, striking figure of a man, with curled-up handlebar mustache, Patch dresses in loose clothing. What immediately catches the eye are the ankle-length pantaloons, bright red or green, ending in bare feet in sandals. He comes right out of vaudeville, in appearance, manner of speech and a voice that needs no microphone and with constant body movement and gestures.

The program notes say it best: "Dr. Adams plays a 19th century snake-oil salesman promoting his special tonics for healthy living such as nutrition, exercise, wonder, curiosity, nature and love. With each tonic there is a different experience which includes dancing, singing and laughing. He will offer techniques for using art and theater to communicate with patients and for personal and professional rejuvenation. He is a physician who is the founder and director of the Gesundheit Institute (in Pocahontas County of West Virginia), a free care health facility in operation the past 18 years. . . . Devoted particularly to self-care and (illness) prevention."

Patch Adams held the audience spellbound when he recited a long T.S. Elliot poem with theatrical dramatics.

The serious theme in all of this was the commune concept wherein professionals were attracted to offering their services for free, purely for the love of service to fellow humans. Depending for support from donations, large and small, from a mailing list of 20,000 supporters, Adam's community has nearly finished building a modern hospital and outlying supporting structures, including housing for the "faculty," on a large tract of land with mountains, waterfalls and lakes. Persons come there for alternative — and traditional — medical care. Offers to pay for it are refused; Medicare, Medicaid and all other insurance remunerations are refused. To a large extent it is a self-sustaining community, except that the necessities are funded by worldwide donations. A medical care utopia? Perhaps, but practical only in the small. Medicine's Shangri La, a "point of light" attractive to the many who yearn for that kind of treatment for their ills.

Day Four: Don't Ask the Doctor, Ask the Patient

Howard Spiro the wise was again the moderator, the morning of the 8th of June. **Harvey Mandell, MD,** co-author (with Spiro) of *When Doctors Get Sick,* was the lead-off speaker. He came from the Backus Hospital in ►

Norwich, Connecticut. He spoke as a patient who had survived a malignant Melanoma, coming across as a very warm physician. One got the feeling that any physician worth his or her salt should have had a personal illness or trauma as a part of training, *before* attempting to be a healer of others.

Perhaps THE highlight of the conference was the following: Presentations by orthopedic surgeon **Jeff Schouten, MD,** who is infected with HIV, **Rona Duran,** the 15-year-old student living with Juvenile Diabetes, **Kay Willard,** a housewife and mother who had to deal with a severely brain-deficient newborn until it died at age 11 months, all from Honolulu, and **Sheriff Richard Marks** of Kalaupapa, a third generation patient with Leprosy long since healed.

The presentations of the first three pulled on our heartstrings. It is impossible to report adequately the details of their stories and the aura of their individual presentations, except to say that the courage of personal revelation of their experiences and emotions was marvelous to behold. Would could every medical student have had this uplift from the listening! This part of the program was aptly titled *The Spirit of the Patient: Perspectives from the Heart.*

Dr. Schouten, now 16 months on AZT (it costs $9,000 a year!) stated: "As a physician, I want to know what's going on with my body, and to have control." He worried about loss of self-identity on retiring as a surgeon, but elected to do so and found it to be easy.

For each of the first three above, the applause from the large audience was unusually prolonged and at a high decibel rating.

Sheriff Marks, a Hawaiian, was the first speaker after the break. He brought to mind the memory of the first Poipu Conference put on by David Elpern for KFCE in 1987. From Antiquity to AIDS, when he, Marks, described the current attitude toward AIDS on the part of a few as being similar to that of the 1800s, when the lepers of Hawaii were "put away" on desolate and inaccessible Kalaupapa on Molokai, without care or treatment. We were quite happy to hear him decry the change in nomenclature from Leprosy to Hansen's Disease, "as if that, all by itself, would remove the stigma!"

The last speaker of this remarkable morning was **Rita Charon,** an active general internist and on the faculty of Columbia P&S in New York. The program notes indicated that "she uses linguistic analytic patterns to study . . . and describe medical communication between patients and doctors." Interestingly, she has patients review the narrative history obtained by her medical students, not only for the patient's benefit, but also to teach the student that his or her own personality influenced the recording. As an aside, it confirms our own belief that patients gravitate toward the doctors who are attuned to the same wavelength as the patient.

In the afternoon, on the lawn under a marquee, Kauai's **Auntie Margaret Machado,** held sway to a group of registrants with her homilies and her Hawaiian lomi lomi (the laying on of manipulative, massaging hands) to make things well.

Nearby, **Rev. Mits Aoki** had been asked by a number of the family practice physicians among the registrants to listen to their problems. We gathered that the major concern was the modern "marketplace" scenario in which the physician was pressured by higher authority to "produce, produce, produce; keep the patients moving in the mill; don't take so much time with communication" — the very antithesis of the Poipu Conference!

That evening, an audience of over 500 filled the ballroom, to hear dynamic speaker and renowned author **Bernie Siegel, MD,** take two and a half hours to address them on *The Psychology of Illness and the Art of Healing.* Surgeon Siegel is the author of *Love, Medicine and Miracles,* which was for a long time number one on the best seller list, and his latest book *Peace, Love and Healing* recently published. His ECaP (Exceptional Cancer Patients) are special people who respond to the crisis of their illness by assuming control of their thinking and lives through a close doctor/patient relationship, often with remarkable results in healing.

Again, what a full day it was!

Day Five: Health Professional and Society

We had prepared ourselves for this, the final morning of POTA, the three speakers and we ourselves as moderator, by meeting privately and planning the format to broaden the picture heretofore from the doctor/patient relationships, to the doctor/community interchange. This meant expanding the audience's perspective to considering how individual physical and mental health, how individuals in dealing with interpersonal relationships on a one-to-one basis by communicating love, empathy, concern and healing to oneself and to others, can be applied by the same techniques to the community in which they live, to the nation of which they are citizens and to the world of planetary citizens.

Our own life's experience is, perhaps, a model of sorts, spanning 50 years in the practice of medicine, in the military overseas in WW II, then under a paternalistic, pineapple plantation system on Lanai, a capitation system on Molokai and finally on a one-to-one private, fee-for-service basis on that island and in suburban Oahu. Medicare had an increasing impact on the practice since its inception 25 years ago, as did various welfare systems, and most recently the HMOs. None of these provided major stress. Perhaps this was due to family support, but credit must also be given to our involvement first in our community and in organized medicine, then in the national scene through Physicians for Social Responsibility (the anti-nuke bunch) and finally in the global sphere through the International Physicians for the Prevention of Nuclear War. These are areas in which physicians can diversify their interest and energies and avoid "burnout" that comes from too intense a focus on only one problem — the individual patient — throughout a lifetime. A la Patch Adams, the physician can "save himself from himself" by broadening his perspective to include the whole human race, thereby becoming a better physician to each of his individual patients — perhaps.

Victor Sidel, MD, Distinguished Professor of Community and Social Medicine at Montefiore Medical Center in the Bronx, and at the Albert Einstein School of

Medicine, past-president of PSR and before that past president of the American Public Health Association, was a natural to be the first speaker of the morning. In addressing his topic: *Asklepios, Apollo and Zeus: Health, Community and Government* Sidel launched into what the program notes said: "Starting from a point of view of the interaction of government, community and medicine as expressed in ancient Greek mythology, the slide and lecture presentation (explored) current issues in the relationship of health professionals and society. (Physicians') roles in environmental and occupational health, in health promotion and disease prevention, in improving access to and the quality of medical care, in urging re-allocation of (national) resources to human services instead of to military arms and in reducing the threat of nuclear war can result in an improved quality of life, better health care and peace for (all their patients who are) the people of this planet."

Sidel was followed by **Reed Tuckson, MD,** Commissioner of Health in the troubled District of Columbia, the seat of our national government. He is a Black and has a powerful command of rhetoric, with the responsibility of trying, against huge odds, to serve the poor of the large black population of Washington and to deal with the causes of the high rate of crime in that city of historical monuments and institutions that attract thousands of visitors from everywhere. His topic, of course, was *Who Serves the Poor and Needy?* Being on PSR's Advisory Board, he also deplored the diminishing national and community resources available for the challenges and responsibilities of the health-care system in meeting the needs of the medically underserved.

Ken Kipnis, PhD, was our anchorman, not only for the final morning session but also for the entire POTA Conference. He is a professor at the University of Hawaii's Department of Philosophy, specializing in medical and legal ethics. His *Power, Responsibility and the Art of Medicine* succeeded in weaving the various themes of the conference into the whole cloth.

What then came out of the exhilarating experience?

This is only one man's opinion, of course. We think the conference's format and faculty attracted the hungry from all walks of life, those who are hungry for humanism, hungry for the non-technical, the non-robot. Modern tech seems so facile in picking up a lost soul, troubled in body and spirit, and placing it on a conveyor belt that leads to the ultimate in medical care — the transplanting of a soul into an accidentally available body. God forbid that this be the ultimate outcome. God forbid that mankind will destroy itself, as it now can, through such means as tampering with life itself or through destruction by the unleashing of the forces within the atom.

The conference revitalized its registrants, gave each one new hope that mankind still can choose the alternative of "Love One Another," the basis of so many of mankind's religions.

We look to David Elpern to devise more of the same in the future.

J.I. Frederick Reppun, MD

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mandatory.

9—Early ablation of a necrotic digit minimizes subsequent hand morbidity.

10—Early intensive hand physiotherapy is necessary in order to minimize morbidity and to facilitate the patient's return to work. Job retraining may be necessary.

Summary

No doubt the best treatment for high-pressure injection injuries of the hand is prevention. Prognosis is dependent upon the material injected (worse with paint and turpentine), the time between injury and treatment, the site of injection and the subsequent inflammatory response. Referral to a surgeon specializing in upper extremity work, for wide exploration and operative debridement in a bloodless field can minimize morbidity. ■

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Readers Express Their Views

Those who are unable to learn from past meetings are condemned to repeat them.

The American Medical Association House of Delegates just completed its Annual Meeting in Chicago with a fairly large Hawaii delegation in attendance. President Allan Kunimoto was one of the tellers in monitoring a very close election for President-elect — the office won by Californian C. John Tupper. Losing candidate (by 5 votes out of 429) Rufus Broadaway of Florida made a very gracious and supportive congratulatory speech.

In the end all battles are lost, and so are all wars.

The RBRVS came in for very little discussion with a repeat of the previous meeting's resolution that the study could serve as a basis for restructuring reimbursement after several areas (including ophthalmology) are re-evaluated. Fortunately, the internal bloodletting many feared would occur did not happen. Although some groups pushed for immediate adoption of the study, that position was not sustained.

Let us confess it: The human situation is always desperate.

The big area of excitement centered around the Congressional plan to adopt "ETs," otherwise known as expenditure targets. Several resolutions were presented in opposition to this plan, especially noting that if the government feels that medical care must be rationed, then HHS should do it. Do not force rationing decisions onto the physician!

A politician thinks of the next election; a statesman of the next generation.

Another area of discussion centered around the plan to have employers provide health insurance for employees — a bill proposed by Congressmen Kennedy and Waxman — to provide coverage for most of the 17 million Americans currently without any health insurance. The discussion ranged from the Southern delegates fearing the end of free practice of medicine, to the Hawaii delegates' observation that we here have had such an insurance law for 15 years and still have managed to survive. The matter was referred to the Board of Trustees to report back in December at the Interim Meeting in Honolulu.

Health economy revisited (not to be taken seriously).

More than 85% of Medicare money is spent on 15% of beneficiaries. More than 50% of Medicare dollars are spent in the last year of patients' lives. The answer is simple: Enact an estate tax equal to the money spent by Medicare for the last 365 days of terminal care. Since data show that the over-65s are the second richest group in the nation (55-65 the most affluent), most of the deceased elderly will have the resources in the estate.

A jury is a group of 12 people of average ignorance, or trust everybody, but cut the cards.

Suspicious as we all are of juries and the legal process, perhaps we should have more respect for them. A recent study by the American Bar Foundation of 1,886 cases of medical-liability, revealed that less than one-third were won by the plaintiff. And on Maui, a jury handed a substantial award to a psychologist who had been wrongly prosecuted by the Medicaid Fraud investigator, affirming that he had been malicious in his prosecution. And who can forget when that same unit prosecuted a humble optician for allegedly fraudently billing Medicaid for nose pads.

Nothing is ever so bad that it can't get worse.

There is no limit to the mischievous creativity of the bureaucratic nabobs in the Health Care Financing Administration. One of the latest trial projects (noted in the February 1 Federal Register) would establish a cataract surgery PPO (Preferred Provider Organization), for Medicare patient surgery. The plan would allow special incentives for a limited number of practitioners or clinics in order to steer more Medicare patients into a financially controlled environment. Although the proposal is still in the design and evaluation stage, and supposedly only 3 test sites are planned, yet several hundred ophthalmologists have written and applied for such status. Our representative roundworm, ASCRS, has communicated loudly with HCFA against any such plan, since it would very likely reward a few by enlarging their surgical volume, but penalize many others, and would be disruptive. Furthermore, it would obviously set in motion considerable complaints of unfair competition and restraint of trade — which it would obviously be. But we all know that the government can commit egregious sins with impunity, while a similar action by another group or person might put one in jail.

Anything is possible if you don't know what you're talking about.

For those of you who are into acupuncture, remember that to treat glaucoma you must needle between the trapezius and the mastoid, as well as the lateral infraorbital. And of course for cataract, don't forget the upper median canthus near the orbital bone. (Thank you, Joyce)

Afterthoughts.

Courtroom = A lawyer's playing field paid for by the taxpayers, where the rules are made by attorneys, the game played by the attorneys, the winners judged by the attorneys, — and no one else is allowed to play.

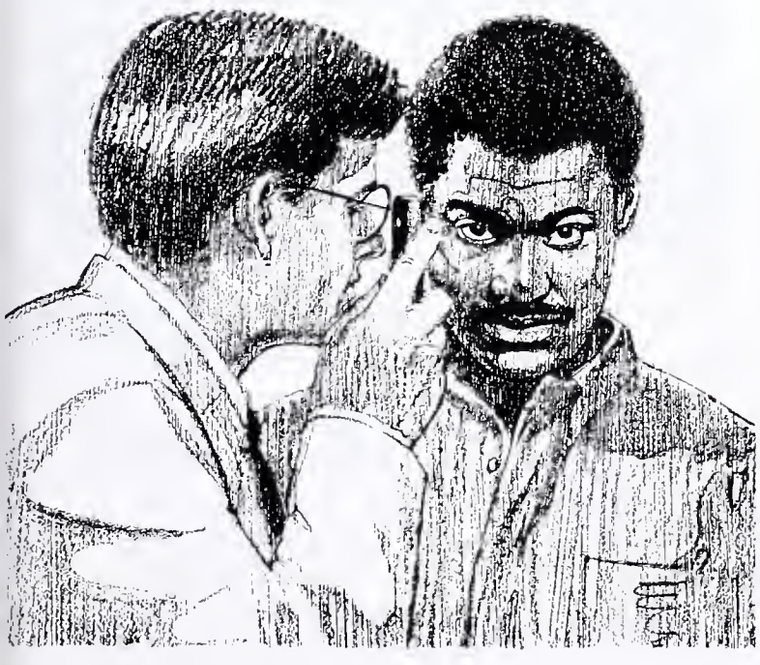
In the first half of the 19th century, *trachoma* (military ophtalmi) and its bacterial complications decimated every army in the European continent and spread to civilian populations.

Herpes zoster ophthalmicus appears to represent an early clinical marker for AIDS in persons at risk.

And remember if you are troubled with *insomnia* try not to lose sleep over it.

Aloha and keep the faith.

Russell T. Stodd, MD
From *The Weathervane*
Vol. 6, No. 6, July 1989



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Action: Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalmic centers and release of posterior pituitary hormone.

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it; however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

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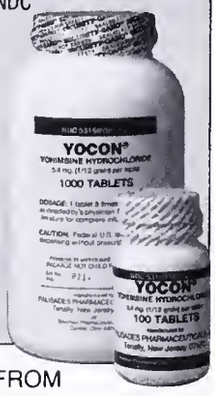
Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

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Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.[1,3,4] 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to ½ tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.[3]

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Over the Editor's Desk

PANEL SPLIT ON SAFETY, EFFECTIVENESS OF CHYMOPAPAIN FOR HERNIATED DISKS – A panel of experts is divided over the safety and effectiveness of chymopapain injections for treating herniated disks, a major cause of disabling back pain, says a report in the *Journal of the American Medical Association.*

Thirty-six members of the Diagnostic and Therapeutic Technology Assessment (DATTA) panel were asked to evaluate published reports on a widely used alternative to surgery for treating ruptured spinal disks. The disks are made of a fibrous outer layer enclosing a jelly-like substance. Wear and tear or trauma can weaken the walls of the disk allowing it to bulge out. When the bulge presses against a nerve it can result in severe pain and back spasms. Sometimes a tear in the disk wall allows the interior gel to leak into surrounding tissues.

Instead of surgery to remove the protruding material, some physicians recommend chemonucleolysis, in which chymopapain (an enzyme derived from the papaya plant) is injected into the bulging disk. The procedure was approved by the Food and Drug Administration in 1982 for certain patients with herniated disks in the lumbar or lower region of the spine.

The panel was split over the safety and effectiveness of chemonucleolysis for patients with an intact herniated disk, who do not improve with conservative treatment. Only 50% of the panel members found the procedure effective; 25% thought it is ineffective, and 25% thought it investigational or that not enough is known for a definitive decision. Only 42% of the experts believed the procedure is adequately safe, while 36% believed it to be too risky.

The panel was more in agreement about chymopapain injections for patients whose ruptured disks are leaking: Sixty-seven percent of panel members considered the procedure to be unsafe and 67% did not believe it to be effective for treating these patients. Only 17% thought its safety has been established and 11% believed it is effective for treating patients with leaking herniated disks.

The report emphasizes the critical importance of careful patient evaluation and selection when considering chemonucleolysis. "They must have both a history and a physical examination that suggest a single herniated disk is the source of their trouble," the panel says. "An adequate trial of conservative therapy should be attempted before chemonucleolysis." Neurological signs also must be present. However, if neurological symptoms are too severe, patients should receive surgery. Finally, the panel says that the diagnostic imaging of any suspect disk must be performed to determine that extent of herniation, but, the panelists warn, "current imaging techniques are not infallible and cannot confer an absolute sense of security when seeming to indicate a nonextruded protruding disk."

A disastrous complication of chemonucleolysis, which according to one report occurred in about one in 2,000 procedures, is leakage of chymopapain into

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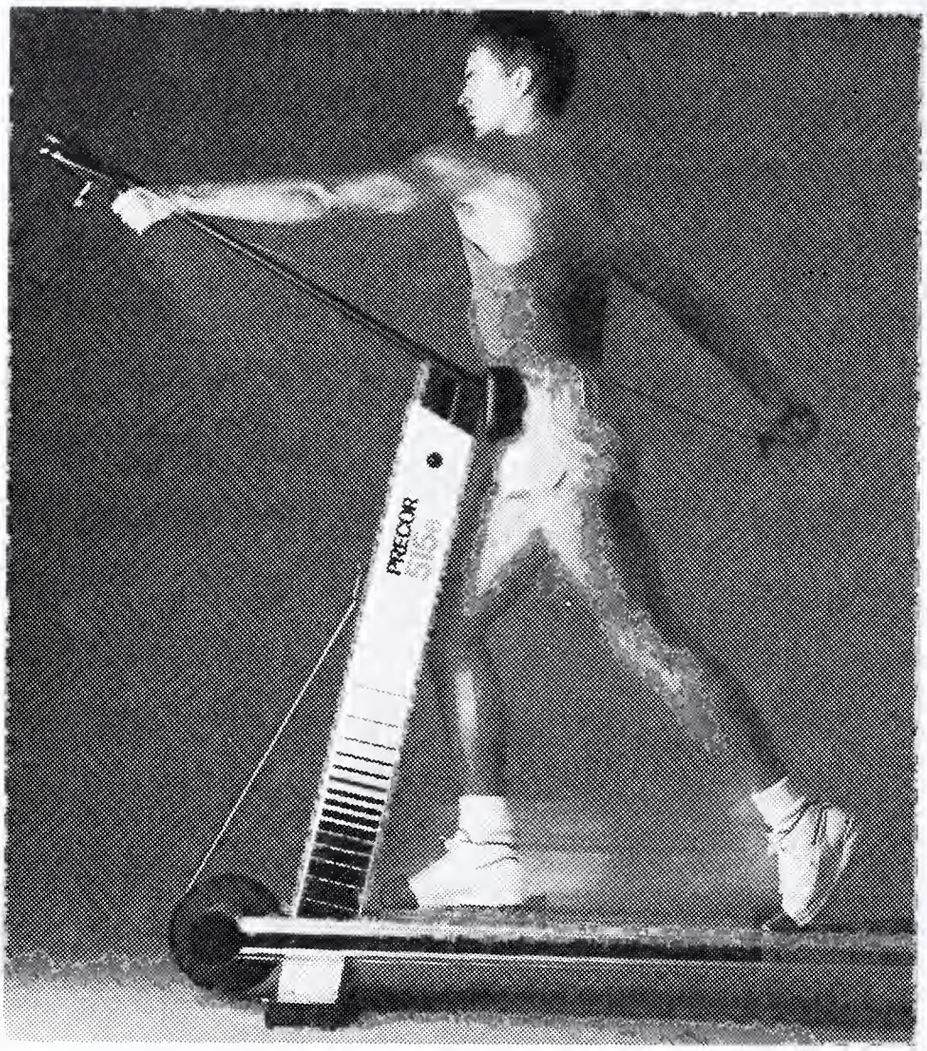
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the cerebrospinal fluid surrounding the spinal nerve cord, resulting in massive neurological damage and sometimes death, the panel reports. The panel estimates the mortality rate of the procedure from all causes is about one in 4,000.

The panelists' chief safety concerns, however, centered on the risk of serious allergic reactions (anaphylaxis) to chymopapain as well as on the risk of physical damage to the spinal cord from the procedure. "The most often quoted estimate for anaphylaxis during chemonucleolysis is an incidence of 1%," which is about 10 times the rate of anaphylaxis caused by penicillin allergy. "Women are 6 to 10 times more likely than men to be sensitive to chymopapain, a finding that is unexplained," the panel reports. "Given the high risk of allergic reactions, once a patient has potentially been directly sensitized to chymopapain by having a chemonucleolysis, this procedure should never be repeated in that patient," the panel warns.

ABBOTT GETS FDA APPROVAL FOR AIDS VIRUS ANTIGEN TEST – Abbott Laboratories announced that it has received approval from the Food and Drug Administration (FDA) to market the first diagnostic test to detect AIDS virus (HIV) antigens. Extensive research published in several medical journals indicates that the HIV antigen test will help physicians in the diagnosis and prognosis of HIV-infected patients.

According to studies published within the past 2 years in the *Journal of the American Medical Association, The New England Journal of Medicine, The Lancet,* and the *British Medical Journal:*

- HIV antigen is detectable in some infected persons (with or without symptoms) prior to HIV antibodies,
- Detection of HIV antigen has been shown to correlate with the development of clinical complications – AIDS, AIDS-related complex (ARC) or other forms of immune deficiency – related to HIV infection,
- HIV antigen detection may be useful in monitoring the treatment of HIV-infected individuals who are participating in research studies of anti-viral drugs.

The new test is an enzyme immunoassay (EIA) that directly detects at least one key antigen or protein produced by the AIDS virus. Other current tests detect HIV antibodies, which indicate infection with the virus. An antigen is a part of the virus. Antibodies to the virus are produced by the body's immune system when a person is infected with HIV.

"HIV antigens can appear temporarily as early as 2 weeks after infection, whereas antibodies are first detectable within 6 to 10 weeks," said Harold Kessler, MD, Director, HIV Treatment Program, Rush Presbyterian Medical Center, Chicago. He added that the utility of the antigen test for diagnosis and prognosis of HIV-infected patients is based on research that links the reappearance of HIV antigens months or years after infection with the eventual development of disease.

A recent study in the *Journal of the American Medical Association* reported that HIV antigen was detected in 2 out of 35,000 plasma donors who tested negative for HIV antibodies. However, HIV antigens have not been detected in the blood donor population in the absence of antibodies, although extensive studies in donors are continuing.

"The reemergence of HIV antigens following the appearance of HIV antibodies means that a patient is at greater risk of developing AIDS or AIDS-related complex (ARC) within 2 to 3 years," said Jean Pierre Allain, MD, PhD, manager of medical research for Abbott's diagnostics division. "In contrast, patients who do not show recurring antigen are less likely to develop HIV-related disease for the same period of time."

Allain added that the test has been used in research to determine the stage of the disease at which various anti-viral drugs being evaluated as AIDS therapies might be effective. ■



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HMA Policy

HMA policy regarding midwifery

Aproved by the HMA Council, June 3, 1989

The Hawaii Medical Association reaffirms its support of the policy of the American College of Obstetricians and Gynecologists that the health team necessary to provide optimal maternity care must be directed by a qualified obstetrician-gynecologist. Fully recognized in this policy is the role of the certified nurse-midwife, who, as a member of this team, may assume responsibility for the complete management of the uncomplicated pregnant woman.

HMA supports the continued requirement of issuance of a nurse-midwifery license by the Department of Health to those qualified. The educational standards for midwives should be no less than licensure as a registered nurse in the State of Hawaii; certification in nurse-midwifery from the American College of Nurse-Midwives, compliance with continuing education requirements as established by the American College of Nurse-Midwives, and other requirements as established by the Department of Health.

Supervision is interpreted to mean a formal association by a nurse-midwife with an obstetrecian-gynecologist or a physician or group of physicians who has a formal consultative arrangement with an obstetrician-gynecologist. This includes written protocols which describe the association in terms of functions and responsibilities of the participants. Supervision does not require the physical presence of the supervising physician.

HMA endorses voluntary supervision of certified nurse-midwives practicing as part of a team with deliveries in certified birthing facilities.

No obstetrician-gynecologist should be required to supervise midwives against his or her wishes.

HMA opposes any effort by the Legislature or Department of Health to mandate any standard of care for obstetrical care by non-physicians less stringent than the standards of the American College of Obstetricians and Gynecologists.

The HMA opposes deliveries by lay midwives or deliveries at uncertified birthing facilities and home deliveries.



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VASOTEC is available in 2.5-mg, 5-mg, 10-mg, and 20-mg tablet strengths

Contraindications: VASOTEC® (Enalapril Maleate, MSD) is contraindicated in patients who are hypersensitive to this product and in patients with a history of angioedema related to previous treatment with an ACE inhibitor.

Warnings: *Angioedema.* Angioedema of the face, extremities, lips, tongue, glottis, and/or larynx has been reported in patients treated with ACE inhibitors, including VASOTEC. In such cases, VASOTEC should be promptly discontinued and the patient carefully observed until the swelling disappears. In instances where swelling has been confined to the face and lips, the condition has generally resolved without treatment, although antihistamines have been useful in relieving symptoms. Angioedema associated with laryngeal edema may be fatal. **Where there is involvement of the tongue, glottis, or larynx likely to cause airway obstruction, appropriate therapy, e.g., subcutaneous epinephrine solution 1:1000 (0.3 mL to 0.5 mL), should be promptly administered.** (See ADVERSE REACTIONS.)

Hypotension: Excessive hypotension is rare in uncomplicated hypertensive patients treated with VASOTEC alone. Heart failure patients given VASOTEC commonly have some reduction in blood pressure, especially with the first dose, but discontinuation of therapy for continuing symptomatic hypotension usually is not necessary when dosing instructions are followed, caution should be observed when initiating therapy (See DOSAGE AND ADMINISTRATION.) Patients at risk for excessive hypotension, sometimes associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death, include those with the following conditions or characteristics: heart failure, hyponatremia, high-dose diuretic therapy, recent intensive diuresis or increase in diuretic dose, renal dialysis, or severe volume and/or salt depletion of any etiology. It may be advisable to eliminate the diuretic (except in heart failure patients), reduce the diuretic dose, or increase salt intake cautiously before initiating therapy with VASOTEC in patients at risk for excessive hypotension who are able to tolerate such adjustments. (See PRECAUTIONS, *Drug Interactions* and ADVERSE REACTIONS.) In patients at risk for excessive hypotension, therapy should be started under very close medical supervision and such patients should be followed closely for the first two weeks of treatment and whenever the dose of enalapril and/or diuretic is increased. Similar considerations may apply to patients with ischemic heart disease or cardiovascular disease in whom an excessive fall in blood pressure could result in a myocardial infarction or cerebrovascular accident. If excessive hypotension occurs, the patient should be placed in supine position and, if necessary, receive an intravenous infusion of normal saline. A transient hypotensive response is not a contraindication to further doses of VASOTEC, which usually can be given without difficulty once the blood pressure has stabilized. If symptomatic hypotension develops, a dose reduction or discontinuation of VASOTEC or concomitant diuretic may be necessary.

Neutropenia/Agranulocytosis. Another ACE inhibitor, captopril, has been shown to cause agranulocytosis and bone marrow depression, rarely in uncomplicated patients but more frequently in patients with renal impairment, especially if they also have a collagen vascular disease. Available data from clinical trials of enalapril are insufficient to show that enalapril does not cause agranulocytosis at similar rates. Foreign marketing experience has revealed several cases of neutropenia or agranulocytosis in which a causal relationship to enalapril cannot be excluded. Periodic monitoring of white blood cell counts in patients with collagen vascular disease and renal disease should be considered.

Precautions: *General: Impaired Renal Function:* As a consequence of inhibiting the renin-angiotensin-aldosterone system, changes in renal function may be anticipated in susceptible individuals. In patients with severe heart failure whose renal function may depend on the activity of the renin-angiotensin-aldosterone system, treatment with ACE inhibitors, including VASOTEC, may be associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death.

In clinical studies in hypertensive patients with unilateral or bilateral renal artery stenosis, increases in blood urea nitrogen and serum creatinine were observed in 20% of patients. These increases were almost always reversible upon discontinuation of enalapril and/or diuretic therapy. In such patients, renal function should be monitored during the first few weeks of therapy.

Some patients with hypertension or heart failure with no apparent preexisting renal vascular disease have developed increases in blood urea and serum creatinine, usually minor and transient, especially when VASOTEC has been given concomitantly with a diuretic. This is more likely to occur in patients with preexisting renal impairment. Dosage reduction and/or discontinuation of the diuretic and/or VASOTEC may be required.

Evaluation of patients with hypertension or heart failure should always include assessment of renal function. (See DOSAGE AND ADMINISTRATION.)

Hyperkalemia. Elevated serum potassium (> 5.7 mEq/L) was observed in approximately 1% of hypertensive patients in clinical trials. In most cases these were isolated values which resolved despite continued therapy. Hyperkalemia was a cause of discontinuation of therapy in 0.28% of hypertensive patients. In clinical trials in heart failure, hyperkalemia was observed in 3.8% of patients, but was not a cause for discontinuation.

Risk factors for the development of hyperkalemia include renal insufficiency, diabetes mellitus, and the concomitant use of potassium-sparing diuretics, potassium supplements, and/or potassium-containing salt substitutes, which should be used cautiously, if at all, with VASOTEC. (See *Drug Interactions*.)

Surgery/Anesthesia. In patients undergoing major surgery or during anesthesia with agents that produce hypotension, enalapril may block angiotensin II formation secondary to compensatory renin release. If hypotension occurs and is considered to be due to this mechanism, it can be corrected by volume expansion.

Information for Patients.

Angioedema: Angioedema, including laryngeal edema, may occur especially following the first dose of enalapril. Patients should be so advised and told to report immediately any signs or symptoms suggesting angioedema (swelling of face, extremities, eyes, lips, tongue, difficulty in swallowing or breathing) and to take no more drug until they have consulted with the prescribing physician.

Hypotension: Patients should be cautioned to report lightheadedness especially during the first few days of therapy. If actual syncope occurs, the patients should be told to discontinue the drug until they have consulted with the prescribing physician.

All patients should be cautioned that excessive perspiration and dehydration may lead to an excessive fall in blood pressure because of reduction in fluid volume. Other causes of volume depletion such as vomiting or diarrhea may also lead to a fall in blood pressure; patients should be advised to consult with the physician.

Hyperkalemia. Patients should be told not to use salt substitutes containing potassium without consulting their physician.

Neutropenia. Patients should be told to report promptly any indication of infection (e.g., sore throat, fever) which may be a sign of neutropenia.

NOTE: As with many other drugs, certain advice to patients being treated with enalapril is warranted. This information is intended to aid in the safe and effective use of this medication. It is not a disclosure of all possible adverse or intended effects.

Drug Interactions.

Hypotension. Patients on Diuretic Therapy: Patients on diuretics and especially those in whom diuretic therapy was recently instituted may occasionally experience an excessive reduction of blood pressure after initiation of therapy with enalapril. The possibility of hypotensive effects with enalapril can be minimized by either discontinuing the diuretic or increasing the salt intake prior to initiation of treatment with enalapril. If it is necessary to continue the diuretic, provide close medical supervision after the initial dose for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and DOSAGE AND ADMINISTRATION.)

Agents Causing Renin Release: The antihypertensive effect of VASOTEC is augmented by antihypertensive agents that cause renin release (e.g., diuretics).

Other Cardiovascular Agents: VASOTEC has been used concomitantly with beta-adrenergic-blocking agents, methyldopa, nitrates, calcium-blocking agents, hydralazine, prazosin, and digoxin without evidence of clinically significant adverse interactions.

Agents Increasing Serum Potassium: VASOTEC attenuates potassium loss caused by thiazide-type diuretics. Potassium-sparing diuretics (e.g., spironolactone, triamterene, or amiloride), potassium supplements, or potassium-containing salt substitutes may lead to significant increases in serum potassium. Therefore, if concomitant use of these agents is indicated because of demonstrated hypokalemia, they should be used with caution and with frequent monitoring of serum potassium. Potassium-sparing agents should generally not be used in patients with heart failure receiving VASOTEC.

Lithium: A few cases of lithium toxicity have been reported in patients receiving concomitant VASOTEC and lithium and were reversible upon discontinuation of both drugs. Although a causal relationship has not been established, it is recommended that caution be exercised when lithium is used concomitantly with VASOTEC and serum lithium levels should be monitored frequently.

Pregnancy—Category C: There was no fetotoxicity or teratogenicity in rats treated with up to 200 mg/kg/day of enalapril (333 times the maximum human dose). Fetotoxicity, expressed as a decrease in average fetal weight, occurred in rats given 1200 mg/kg/day of enalapril but did not occur when these animals were supplemented with saline. Enalapril was not teratogenic in rabbits. However, maternal and fetal toxicity occurred in some rabbits at doses of 1 mg/kg/day or more. Saline supplementation prevented the maternal and fetal toxicity seen at doses of 3 and 10 mg/kg/day, but not at 30 mg/kg/day (50 times the maximum human dose).

Radioactivity was found to cross the placenta following administration of labeled enalapril to pregnant hamsters.

There are no adequate and well-controlled studies of enalapril in pregnant women. However, data are available that show enalapril crosses the human placenta. Because the risk of fetal toxicity with the use of ACE inhibitors has not been clearly defined, VASOTEC® (Enalapril Maleate, MSD) should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Postmarketing experience with all ACE inhibitors thus far suggests the following with regard to pregnancy outcome. Inadvertent exposure limited to the first trimester of pregnancy has not been reported to affect fetal outcome adversely. Fetal exposure during the second and third trimesters of pregnancy has been associated with fetal and neonatal morbidity and mortality.

When ACE inhibitors are used during the later stages of pregnancy, there have been reports of hypotension and decreased renal perfusion in the newborn. Oligohydramnios in the mother has also been reported, presumably representing decreased renal function in the fetus. Infants exposed *in utero* to ACE inhibitors should be closely observed for hypotension, oliguria, and hyperkalemia. If oliguria occurs, attention should be directed toward support of blood pressure and renal perfusion with the administration of fluids and pressors as appropriate. Problems associated with prematurity such as patent ductus arteriosus have occurred in association with maternal use of ACE inhibitors, but it is not clear whether they are related to ACE inhibition, maternal hypertension, or the underlying prematurity.

Nursing Mothers. Milk in lactating rats contains radioactivity following administration of ^{14}C enalapril maleate. It is not known whether this drug is secreted in human milk. Because many drugs are secreted in human milk, caution should be exercised when VASOTEC is given to a nursing mother.

Pediatric Use. Safety and effectiveness in children have not been established.

Adverse Reactions: VASOTEC has been evaluated for safety in more than 10,000 patients, including over 1000 patients treated for one year or more. VASOTEC has been found to be generally well tolerated in controlled clinical trials involving 2987 patients.

HYPERTENSION: The most frequent clinical adverse experiences in controlled trials were: headache (5.2%), dizziness (4.3%), and fatigue (3%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in controlled clinical trials were: diarrhea (1.4%), nausea (1.4%), rash (1.4%), cough (1.3%), orthostatic effects (1.2%), and asthenia (1.1%).

HEART FAILURE: The most frequent clinical adverse experiences in both controlled and uncontrolled trials were: dizziness (7.9%), hypotension (6.7%), orthostatic effects (2.2%), syncope (2.2%), cough (2.2%), chest pain (2.1%), and diarrhea (2.1%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in both controlled and uncontrolled clinical trials were: fatigue (1.8%), headache (1.8%), abdominal pain (1.6%), asthenia (1.6%), orthostatic hypotension (1.6%), vertigo (1.6%), angina pectoris (1.5%), nausea (1.3%), vomiting (1.3%), bronchitis (1.3%), dyspnea (1.3%), urinary tract infection (1.3%), rash (1.3%), and myocardial infarction (1.2%).

Other serious clinical adverse experiences occurring since the drug was marketed or adverse experiences occurring in 0.5% to 1% of patients with hypertension or heart failure in clinical trials in order of decreasing severity within each category:

Cardiovascular. Cardiac arrest, myocardial infarction or cerebrovascular accident, possibly secondary to excessive hypotension in high-risk patients (see WARNINGS, *Hypotension*), cardiac arrest; pulmonary embolism and infarction, rhythm disturbances, atrial fibrillation, palpitation.

Digestive. Ileus, pancreatitis, hepatitis or cholestatic jaundice, melena, anorexia, dyspepsia, constipation, glossitis.

Nervous/Psychiatric. Depression, confusion, ataxia, somnolence, insomnia, nervousness, paresthesia.

Urogenital: Renal failure, oliguria, renal dysfunction (see PRECAUTIONS and DOSAGE AND ADMINISTRATION).

Respiratory: Bronchospasm, rhinorrhea, asthma, upper respiratory infection.

Skin. Herpes zoster, pruritus, alopecia, flushing, photosensitivity.

Other. Vasculitis, muscle cramps, hyperhidrosis, impotence, blurred vision, taste alteration, tinnitus.

A symptom complex has been reported which may include fever, myalgia, and arthralgia; an elevated erythrocyte sedimentation rate may be present. Rash or other dermatologic manifestations may occur. These symptoms have disappeared after discontinuation of therapy.

Angioedema. Angioedema has been reported in patients receiving VASOTEC (0.2%). Angioedema associated with laryngeal edema may be fatal. If angioedema of the face, extremities, lips, tongue, glottis, and/or larynx occurs, treatment with VASOTEC should be discontinued and appropriate therapy instituted immediately. (See WARNINGS.)

Hypotension: In the hypertensive patients, hypotension occurred in 0.9% and syncope occurred in 0.5% of patients following the initial dose or during extended therapy. Hypotension or syncope was a cause for discontinuation of therapy in 0.1% of hypertensive patients. In heart failure patients, hypotension occurred in 6.7% and syncope occurred in 2.2% of patients. Hypotension or syncope was a cause for discontinuation of therapy in 1.9% of patients with heart failure. (See WARNINGS.)

Clinical Laboratory Test Findings:

Serum Electrolytes: Hyperkalemia (see PRECAUTIONS), hyponatremia.

Creatinine, Blood Urea Nitrogen. In controlled clinical trials, minor increases in blood urea nitrogen and serum creatinine, reversible upon discontinuation of therapy, were observed in about 0.2% of patients with essential hypertension treated with VASOTEC alone. Increases are more likely to occur in patients receiving concomitant diuretics or in patients with renal artery stenosis. (See PRECAUTIONS.) In patients with heart failure who were also receiving diuretics with or without digitalis, increases in blood urea nitrogen or serum creatinine, usually reversible upon discontinuation of VASOTEC and/or other concomitant diuretic therapy, were observed in about 11% of patients. Increases in blood urea nitrogen or creatinine were a cause for discontinuation in 1.2% of patients.

Hemoglobin and Hematocrit: Small decreases in hemoglobin and hematocrit (mean decreases of approximately 0.3 g % and 1.0 vol %, respectively) occur frequently in either hypertension or heart failure patients treated with VASOTEC but are rarely of clinical importance unless another cause of anemia coexists. In clinical trials, less than 0.1% of patients discontinued therapy due to anemia.

Other (Causal Relationship Unknown): In marketing experience, rare cases of neutropenia, thrombocytopenia, and bone marrow depression have been reported.

Liver Function Tests. Elevations of liver enzymes and/or serum bilirubin have occurred.

Dosage and Administration: *Hypertension:* In patients who are currently being treated with a diuretic, symptomatic hypotension occasionally may occur following the initial dose of VASOTEC. The diuretic should, if possible, be discontinued for two to three days before beginning therapy with VASOTEC to reduce the likelihood of hypotension. (See WARNINGS.) If the patient's blood pressure is not controlled with VASOTEC alone, diuretic therapy may be resumed.

If the diuretic cannot be discontinued, an initial dose of 2.5 mg should be used under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions*.)

The recommended initial dose in patients not on diuretics is 5 mg once a day. Dosage should be adjusted according to blood pressure response. The usual dosage range is 10 to 40 mg per day administered in a single dose or in two divided doses. In some patients treated once daily, the antihypertensive effect may diminish toward the end of the dosing interval. In such patients, an increase in dosage or twice-daily administration should be considered. If blood pressure is not controlled with VASOTEC alone, a diuretic may be added.

Concomitant administration of VASOTEC with potassium supplements, potassium salt substitutes, or potassium-sparing diuretics may lead to increases of serum potassium (see PRECAUTIONS).

Dosage Adjustment in Hypertensive Patients with Renal Impairment. The usual dose of enalapril is recommended for patients with a creatinine clearance >30 mL/min (serum creatinine of up to approximately 3 mg/dL). For patients with creatinine clearance ≤30 mL/min (serum creatinine ≥3 mg/dL), the first dose is 2.5 mg once daily. The dosage may be titrated upward until blood pressure is controlled or to a maximum of 40 mg daily.

Heart Failure. VASOTEC is indicated as adjunctive therapy with diuretics and digitalis. The recommended starting dose is 2.5 mg once or twice daily. After the initial dose of VASOTEC, the patient should be observed under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions*.) If possible, the dose of the diuretic should be reduced, which may diminish the likelihood of hypotension. The appearance of hypotension after the initial dose of VASOTEC does not preclude subsequent careful dose titration with the drug, following effective management of the hypotension. The usual therapeutic dosing range for the treatment of heart failure is 5 to 20 mg daily given in two divided doses. The maximum daily dose is 40 mg. Once-daily dosing has been effective in a controlled study, but nearly all patients in this study were given 40 mg, the maximum recommended daily dose, and there has been much more experience with twice-daily dosing. In addition, in a placebo-controlled study which demonstrated reduced mortality in patients with severe heart failure (NYHA Class IV), patients were treated with 2.5 to 40 mg per day of VASOTEC, almost always administered in two divided doses. (See CLINICAL PHARMACOLOGY, *Pharmacodynamics and Clinical Effects*.) Dosage may be adjusted depending upon clinical or hemodynamic response. (See WARNINGS.)

Dosage Adjustment in Heart Failure Patients with Renal Impairment or Hyponatremia: In heart failure patients with hyponatremia (serum sodium <130 mEq/L) or with serum creatinine >1.6 mg/dL, therapy should be initiated at 2.5 mg daily under close medical supervision. (See DOSAGE AND ADMINISTRATION, *Heart Failure*, WARNINGS, and PRECAUTIONS, *Drug Interactions*.) The dose may be increased to 2.5 mg b.i.d., then 5 mg b.i.d. and higher as needed, usually at intervals of four days or more, if at the time of dosage adjustment there is not excessive hypotension or significant deterioration of renal function. The maximum daily dose is 40 mg.

For more detailed information, consult your MSD Representative or see Prescribing Information. Merck Sharp & Dohme, Division of Merck & Co., Inc., West Point, PA 19486.

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HMA President Allan Kunimoto reports in the August 1989 HMA Newsletter on what he heard at the AMA meeting in Chicago in June. We comment thereon:

Our New AMA President Alan Nelson, MD, said:

1: We must re-emphasize humanism and the art of (medical) care
We agree 100%

2: Half the doctors don't explain things well to their patients
Agreed, but . . .

3: Most doctors don't spend enough time with their patients
Agreed, but . . .

4: Doctors keep their patients waiting too long
Not a fair criticism

5: Doctors are too interested in making money
Some are; some make too much

6: Doctors don't care about people as much as they used to
False!

1. Many of us, particularly among the up and coming neophytes, are coming around to rededicating our professionalism toward that end, but we are being squeezed by government, by "plans" and by insurance carriers, by the "marketplace," by technocracy, by the complexity of new and powerful drugs that can do harm with the good, and, particularly by the harassment by challenging suits by patients (and their attorneys), patients whom we can no longer trust; squeezed into being cold and hard.
2. That is indeed our fault; we are no longer the venerated "Sensei." We are now in the age of "informed consent." Many of us are not learning that medicine is now a "contract" between patient and doctor, a contract in which both parties are presumed to share and accept equally the "fine print" of knowledge of the benefits and the risks. Of course this is never "equal," unless the patient is another doctor! A contract between a borrower and a banker requires that a default be covered by insurance. The borrower has to pay the premium on that policy; the borrower — the patient — does not. Perhaps he should, at least in part, since he has accepted the risks with the benefits.
3. Agreed! But how *can* he, when the waiting room is full? Every doctor has many bosses: Each and every patient. Unless he is a solo practitioner, as it used to be long, long ago, he is also "bossed" by his group, by his HMO, by the patient's insurance carrier and, most of all, by Big Brother — the government. Waiting too long for the doctor is a compliment to the doctor; the ineffectual and the unpopular physician's office can be pretty empty! It's the same in a bread line, or a traffic line: People waiting in line get mad when some impatient "patient" barges in without an appointment. The criticism should be directed against the demand side, rather than at the supplier.
4. Ditto
5. Some *are* — to the discredit of the healing profession. The idealism of the young person who wishes to enter the profession is often subverted by what transpires in the educational system, particularly at the realization of its total costs. The graduate, after residency and particularly after specialty training, is saddled with a huge financial burden. He should not be denied raising a family of his own until after the obligation is paid off, thus assuming a normal burden on top of the obligation. Consequently, he *has to* earn a lot of money, i.e., see a lot of patients, *and* satisfy them, so that his practice can grow. It is equally true and acceptable that, if his work as a physician is of such quality that he builds up a large practice, he should be entitled to a large income. Nevertheless, the traditional mantle of the compassionate physician who dispenses charity as well as hope and faith, does not sit well on the shoulders of the doctor who flaunts his Porsches and Mercedes!
6. Finally, this image of not caring is a false image. It is a manufactured image, manufactured by the elements in the governmental bureaucracy that go blind, staring at cost figures on paper, and blind to the realities of the demands of 250 million people who want equal rights to all the expensive goodies that modern American medicine has to offer.

The moral to this story is in the heading above: **Both quantity and quality of medical care cost money!** Which is more cost-effective? One stealth bomber, or one premature neonate saved at a cost of $50,000, who grows up to become an Albert Einstein?

J.I. Frederick Reppun, MD
Editor

(Continued on page 418)

HMA Committee Reports

Chronic Illness and Aging Committee

The HMA Chronic Illness and Aging Committee, under the chairmanship of Walter Quisenberry, MD, met on August 23 at the HMA offices. Those present included Ms. Eva Dunbar; Reuben Guerrero, MD; Ms. Edna Lau; George Mills, MD; Kleona Rigney, MD; Cliff Moran, MD of Maui; Fred Reppun, MD; Jeannette Takamura, PhD; guest Ruth Stepoulis, RN, who leads the senior citizens of Central Union Church; and guest speaker Betsy Weiner, MD, geriatric psychiatrist.

The topic was Alzheimer's Disease and Other Dementias.

Betsy prefaced her remarks by citing the Elderly Abuse law (HB 1844) passed at the recent State legislative session. She described it as a "good law," except it was not to go into effect until 1991, and then "sunset" in 1993. It pertained to those 60 years old and older (a legal definition of "elderly"). The State Department of Human Services (DHS) is mandated to do the investigating of reported abuses and would have right of entry without a warrant.

"Five percent of people 65 years of age or older have dementia," Weiner said. Her report follows:

Recognition of Alzheimer's and Other Dementias

Dementia is a condition with significant degeneration of nerve cells in the brain leading to impairment of previous intellectual abilities. The loss of mental function is of sufficient severity to interfere with social or occupational activity. There is loss of memory, loss of judgment, impairment of language, calculation and abstract thinking as well as labile mood. These losses may have been developing for years, maybe 5 to 10 years, but come to attention when a person with dementia is lost, becomes confused in unfamiliar places or loses essential supports.

Diagnostic Considerations

At this time Alzheimer's disease has no diagnostic biological markers or functional tests. It is a diagnosis by exclusion. Alzheimer's Disease has been found to account for 50% to 70% of all cases of dementia in consecutive autopsy studies. (Pathologist Moran interjected his observation that only one in five autopsies has demonstrated true Alzheimer's.) Multi-infarct dementia makes up 15% to 25% of cases and alcoholism is third with 4% to 5% of cases. In addition, over 60 other conditions including head injury, infections, toxins, tumors, and metabolic disorders can cause dementia, including iatrogenic causes.

Diagnostic workup is essential in uncovering *reversible* causes of dementia, which account for 10% to 30% of all cases.

Diagnostic Tests — NIH 1987

Careful history and physical and *mental* examination contribute most of the essential data.

Basic and Standard diagnostic tests include:

- Complete blood count
- Electrolyte panel
- Thyroid function tests
- Vitamin B-12 and folate levels
- Tests for syphilis and, where indicated, for HIV antibodies
- Urinalysis
- Electrocardiogram
- Chest X-ray
- Evaluation of all medications taken in the past

Ancillary studies to be considered include:

- Computed tomography of the brain
- Further neurological and psychiatric evaluation
- R/O pseudodepression

Tips on Treatment

The etiology of Alzheimer's Disease in the vast majority of cases that are not hereditary is not known at this time. Definitive cure and prevention are, therefore, not possible. Where specific causes of dementia are discovered, therapeutic measures can be taken as indicated. For all cases of dementia, active treatment is useful to maintain general health through diet and exercise, to treat other medical conditions, and also *to support and maintain the health and well-being of caregivers.*

Careful Management of Medications

- Sedative-hypnotics are contraindicated. All, including benzodiazepines, can produce paradoxical agitation.
- Diphenhydramine can be utilized if nighttime sleep is disrupted.
- Antidepressants are to be used for depression only in the early stage of dementia or if a severe depressive episode is present.
- Low doses of neuroleptic drugs may be indicated

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if anxiety increases with agitation, suspicion, belligerence, delusions or hallucinations present. The major tranquilizers can be prescribed once a day.

All medications require starting with minimal doses, careful monitoring and review, and ongoing contact with the caregivers.

Research Developments

The search for the cause of Alzheimer's Disease goes on. So far, no single factor has been implicated though a small percent of cases clustered in families do have autosomal dominant inheritance of a gene located on chromosome 21. Ongoing studies include clinical, pathological, biochemical, viral, immunological and microbiological investigations into the onset, course and possible prevention and treatment of Alzheimer's disease.

Legal Considerations

When incompetency is present and it has been observed that a person with dementia is no longer able to make decisions, a durable power of attorney, guardianship or living trusts can provide a basis for continuing care. Physicians need to provide statements to Family Court on the capability of patients to care for themselves in cases where guardianship proves necessary. A report of inability to care for daily needs, inability to manage finances and lack of capability to make decisions may be indicated.

Support Services

Each county has an area agency on aging with services funded through the Older Americans Act. Local chapters and satellites of the Alzheimer's Association can provide support to families and further information.

There was considerable input from attendees. It was pointed out that intervention was difficult because of the gradual onset of the affliction, wherein the victim would resist such intervention. Also, that the caregiver was often the subject of "abuse" by the patient; a characteristic of the disease being belligerence and resistance against restraint or assistance.

J.I. Frederick Reppun, MD
Committee recorder

For the next four months, the most desirable place for Kama'ainas to meet is also a bargain.

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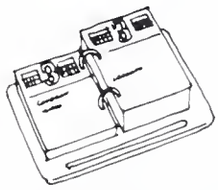
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CALENDAR OF ACCREDITED EVENTS—CATEGORY 1

Accredited Programs of CME allow one unit of AMA credit for each hour of instruction excluding all "breaks." Some programs also are accredited for AAFP prescribed credit.

LOCAL ACCREDITED PROGRAMS ONGOING

For a complete list of ongoing programs, please refer to the September 1989 edition of the HAWAII MEDICAL JOURNAL. Further information is available through the individual institutions or through the HMA's CME Department.

SPECIAL EVENTS

All special events should be confirmed with the CME program sponsors, as cancellations are not necessarily reported to the HAWAII MEDICAL JOURNAL.

OCTOBER

10/09-10/13

Selected Topics in Sports Medicine. Contact: Tropical Seminars, P.O. Box 1399, Poulsbo, WA 98370; 206-697-5776. Location: Kona Surf Resort, Big Island of Hawaii.

10/11-10/14

Hip and Knee Reconstructive Surgery 1989. Contact: UCLA, 213-825-5840. Location: Sheraton Kauai.

10/14-10/21

New Approaches to the Evaluation of Neoplastic Lymphoproliferative Disorders, USC School of Medicine University Pathology Associates. Contact: University Pathology Associates, Inc., Department of Pathology, USC School of Medicine, 2025 Zonal Avenue, Los Angeles, CA 90033. Location: Wailea Beach Resort, Maui.

10/14-10/21

11th International Seminar on Operative Arthroscopy. Contact: UCLA, Continuing Education in Health Sciences, Univ. Ext. 10995 Le Conte Ave., #616, Los Angeles CA 90024; 213-206-8985. Location: Maui.

10/14-10/21

Fourteenth Annual International Body Imaging Conference. Contact: Body Imaging Conference, 9800 D. Topanga Canyon Blvd., Suite 232, Chatsworth, CA 91311, 818-700-9821. Location: Hyatt Regency Waikoloa, Big Island of Hawaii.

10/14-10/21

Controversies & Critical Issues in Perinatal Medicine & Nursing. Contact: Symposia Medicus, 2815 Mitchell Dr., Suite 128, Walnut Creek, CA 94598-1622, 415-935-7889. Location: Stouffer Waiohai Beach Resort, Kauai.

10/14-10/21

14th Annual Pediatrics for the Practitioner. Contact: Univ. Of Calif. Irvine, Dept. of CME, 2801 Atlantic Ave., Box 1428, Long Beach, CA 90801-1428; 213-595-3823. Location: Mauna Kea.

10/26-10/31

Pacific Dermatology Assn. Annual Mtg. Contact: Am Acad of Dermatology, 1567 Maple Avenue, Evanston, IL 60201, Dr. Lowe-213-828-2282. Location: Honolulu

10/31-11/03

Therapeutic Hotline. Contact: Paul H. Jacobs, MD, Dept. of Dermatology, Rm. R-144, Stanford, CA 94305, 415-723-7854. Location: Molokai.

NOVEMBER

11/02-11/07

The ACP-UH MKSAP VIII Review Course. Contact: Irwin J. Schatz, M.D., Professor & Chairman, Department of Medicine, John A. Burns School of Medicine, 1960 East-West Road, Honolulu, HI 96822, 808-548-2810. Location: Stouffer Wailea Beach Resort, Maui.

11/07-11/14

Annual Clinical Meeting, District I, The American College of OB-GYN. Contact: Colpitts Medical Meeting Planners, 450 Providence Highway, Dedham/Boston, MA 02026-6868, 1-800-972-7777; 617-326-7800. Location: Maui and Kauai.

EDITORIAL *(Continued from page 413)*

MAST

In this issue of the JOURNAL, Cummons, Bonham and French report on the experience of the 68th Medical Detachment of the U.S. Army at Hickam AFB in providing air transport service to the State's Emergency Medical Services (EMS) through MAST (Military Assistance to Safety and Traffic). The Detachment's record is exemplary — some 3,000 missions over the past 15 years.

The article reviews the experience in the calendar years 1985 and 1986 only, when 483 missions were flown, carrying 565 persons, mostly civilians, who were seriously ill or injured at any old site on Oahu, to definitive treatment in-hospital. And, with not a single accidental injury to personnel nor serious damage to equipment!

MAST, the service, the pilots and the flight medics are indeed to be congratulated!

With respect to the children involved — 22% of the casualties were neonates and others to age 16 — we wonder what's holding up the placement of a helipad at KMCWC?

As Oahu becomes gradually more and more clogged with a gridlock of vehicles on the roads, emergency air transport will soon become even a more "vital" necessity.

What's more, MAST is a prime example of a way to convert from military purposes to peacetime civilian, and still maintain readiness for defense.

J.I. Frederick Reppun, MD
Editor

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MAST: An integral part of Hawaii State Emergency Medical Services

C. Loren Cummons, PA-C, MPH*
Robert T. Bonham, MD**
Benjamin P. French, Capt., USA, MSC†

The 68th Medical Detachment of the U.S. Army, stationed at Hickam Air Force Base, has provided MAST (Military Assistance to Safety and Traffic) transport services to the civilian population of Oahu for the past 15 years. Compared to the 31 units located all across the Mainland, this unit is the most active, flying more than 200 missions per year, with a cumulative total of over 3,000 missions since its inception in 1974[1,2]. Yet, despite its important role in transporting critical patients from the field and providing a beneficial community service, many health professionals do not know what MAST is nor what it does.

The military has long recognized the importance of rapid transfer of its injured to medical facilities in order to reduce mortality and morbidity. During the Korean and particularly the Vietnam conflicts, there was heavy reliance on the helicopter to evacuate the injured rapidly from the battlefield to facilities behind the front line[3,4,5,6]. It was rare for a wounded soldier to be more than 30 minutes away from a hospital or MASH unit (Medical and Surgical Hospital)[3]. The record has shown a steady increase in patient survival after they reach a medical facility[3,6]. This dramatic increase during the Vietnam conflict was attributed to the use of the helicopter, the aero-medical ambulance.

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**Director, Emergency Services
Waianae Coast Comprehensive Health Center
†Captain, U.S. Army
Operations Officer
MAST

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The success of the military was quickly appreciated by and shared with the civilian sector through the establishment of the MAST program. What began as only a model program in July 1970 at Fort Sam Houston, Texas, soon expanded rapidly throughout the states[4,7]. In 1974, the Hawaii MAST unit, more properly the 68th Medical Detachment of the U.S. Army, was set up and is now located at Hickam AFB. This unit has been in continuous service until the present time providing 24-hour coverage the year round. We have undertaken herewith a 2-year retrospective chart-review of the Hawaii MAST services in order to highlight its effectiveness and capabilities.

Methods

From January 1, 1985, to December 31, 1986, all records relating to the 483 missions flown were reviewed. A mission is defined simply as the transport of 1 or more patients from a pick-up site to a drop-off site. At the completion of a mission, 3 documents are submitted: One each from the radio-telephone operator who initiated the mission, the pilot who flew the mission and 1 by the flight medic who was responsible for patient care. The records of all 483 missions were available to us for review.

These reports were specific for times of mission launch, arrival on-site and destination; location; type of patient and medical status; the procedures undertaken en route and any information affecting either the flight safety or patient care. The flight medic completed a standard Emergency Medical Service (EMS) ambulance report form used by the City and County of Honolulu ambulance personnel. The severity of the patient's condition was determined by the flight medic. Because the patient's identity is kept confidential, we were unable to verify diagnoses or compare the diagnosis listed by the flight medic with that of the receiving physician.

Included in this study of a 2-year period, we also reviewed the personnel training and equipment of the MAST unit.

Results

During this study period the 483 MAST missions involved the transport of 565 patients. This represented a ►

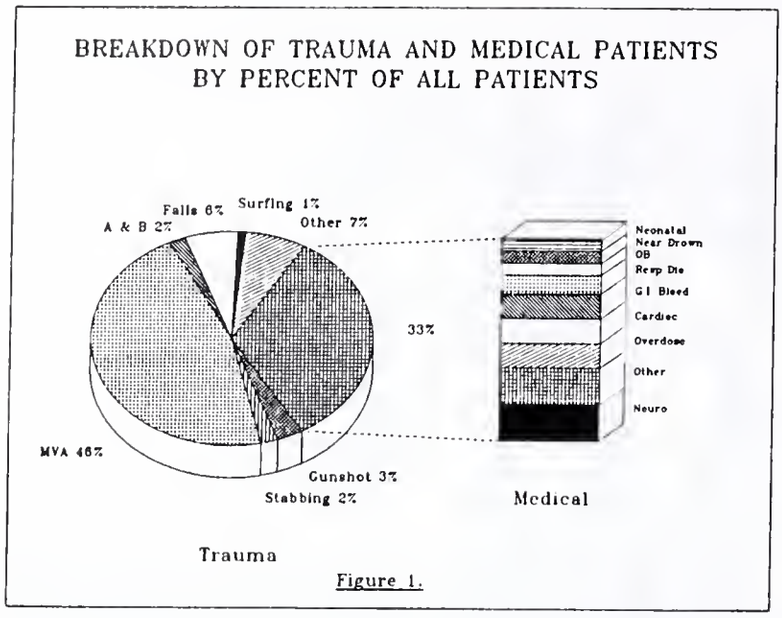


Figure 1.

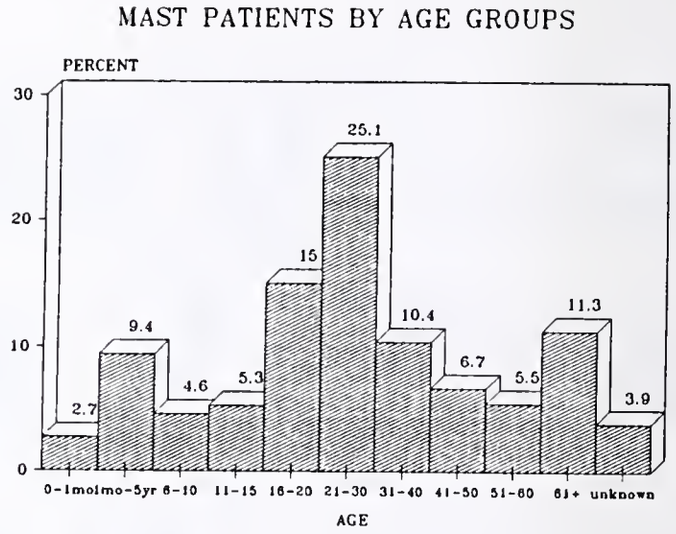


Figure 3.

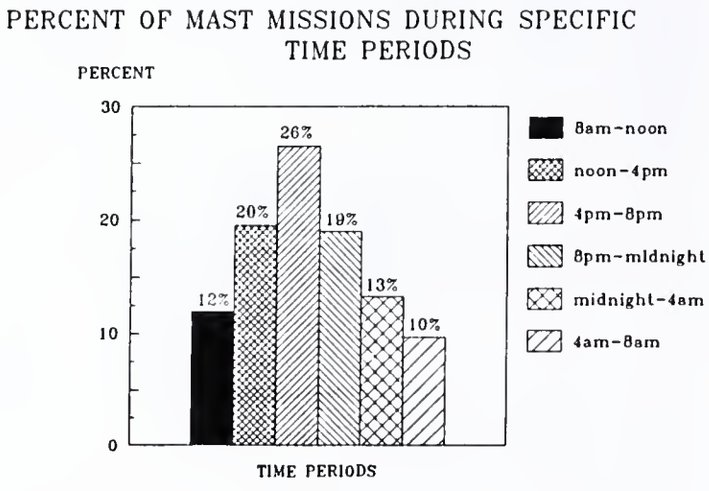


Figure 2.

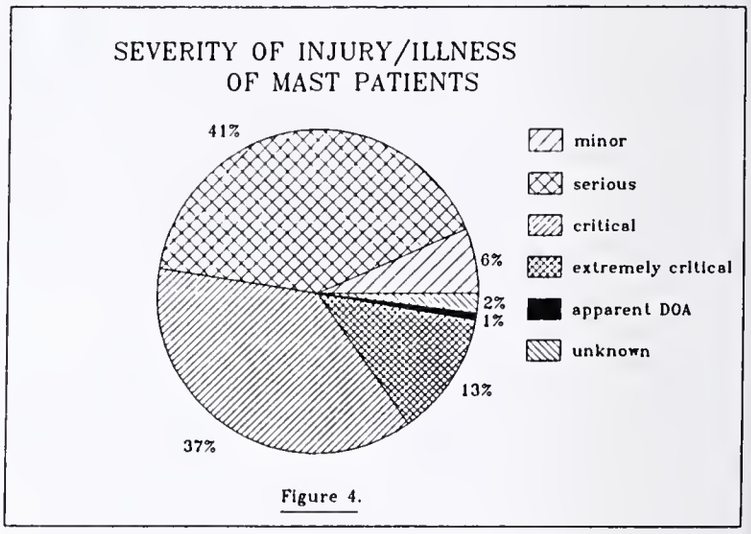


Figure 4.

17% increase over that reported by Sims et al.[8] for the early years 1974-1978. Figure 1 shows that two-thirds of all patients transported were involved in some form of trauma, with almost one-half (45.5%) involved in motor vehicle accidents. The next category, falls, was a distant second with only 6% of the patients. The combined categories of gunshot wounds (GSW), knife wounds, and assault and battery, accounted for approximately 7% of cases.

Medical causes for evacuation made up the remaining one-third (32.7%) of the patients. Neurological causes, including TIAs, CVAs, and seizures, headed the list with 6%, followed closely by overdosing with drugs, cardiac problems and GI bleeds. Surfing incidents and near drownings involved only 3.1% of the cases.

Most of the missions (65%) were flown from noon to midnight with just over one-quarter of the missions (26.5%) between 4 PM and 8 PM (Figure 2). This is significant when one considers the rush-hour traffic problem that would exist for land transport. Of considerable interest is the fact that over half of the missions (54%) were flown at night or during twilight, and without one accident being recorded!

Two-thirds of those transported were males (67.3%); 40% of all patients were between the ages of 16 and 30 years (Figure 3). Children less than 16 years old comprised just under one-quarter (22%) of the patients. The elderly, defined as those older than 61, comprised over 10% of the total.

Figure 4 shows that one-half (49.8%) of the patients were in either critical or extremely critical condition. Fifty percent of the missions involved transport of more than one patient. As mentioned above, the severity of the case was determined by the flight medic, based on an assessment at the scene.

The Queen's Medical Center and Kuakini Medical Center combined received most of the patients (91.5%) (see Figure 5), with an equal number transported to each of the 2 facilities. Kapiolani Medical Center for Women and Children has no heliport; therefore, it received patients ►



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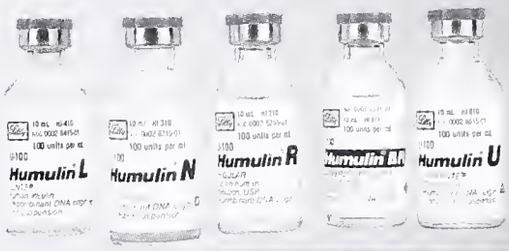
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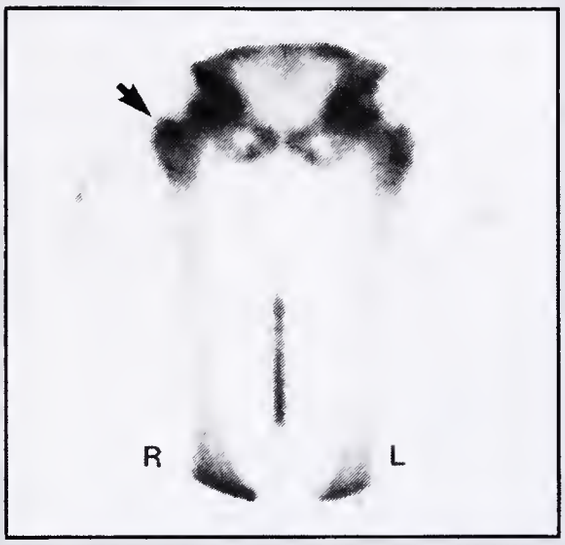
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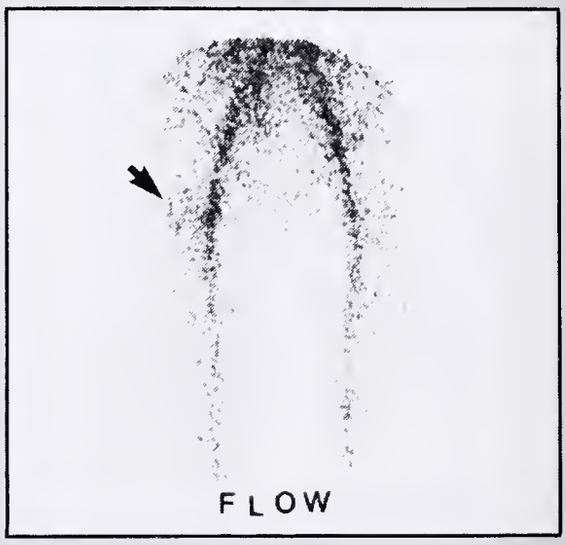
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Nuclear Medicine Teaching File

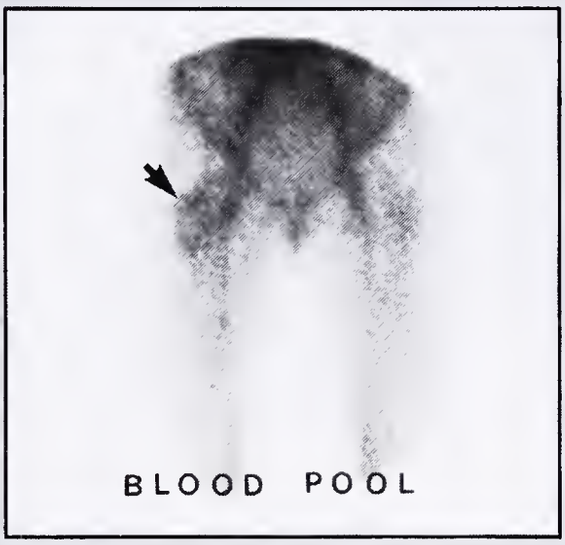
THREE PHASE BONE SCANNING IN OSTEOMYELITIS



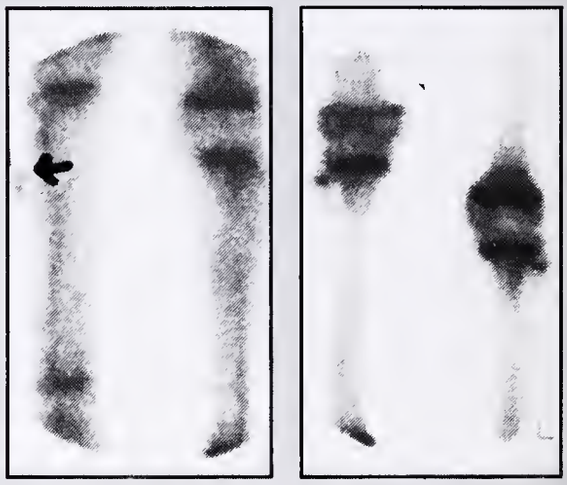
1. "Standard" bone image made 4 hours after injection (3rd phase) shows increased tracer localization in the right greater trochanter of an 8 year old with fever and hip pain. Is this osteomyelitis, tumor, fracture, etc.?



2. A single image from this patient's radionuclide angiogram or "flow study" (first phase) was taken from 12 to 16 seconds after injection and shows focally increased blood flow to the region of the right greater trochanter.



3. This patient's "blood pool" image, made from 1 to 2 minutes after injection (second phase) shows corresponding hyperemia. The early findings raise the specificity for osteomyelitis from roughly 75% to 95%, with no loss of the bone scan's exquisite sensitivity.



4. A 9 year old with soft tissue abscess below the knee is referred to rule out osteomyelitis. A: "Blood pool" image shows focal hyperemia superficially located. B: Delayed bone image shows no evidence of osteomyelitis. Diagnosis: soft tissue abscess without osteomyelitis.

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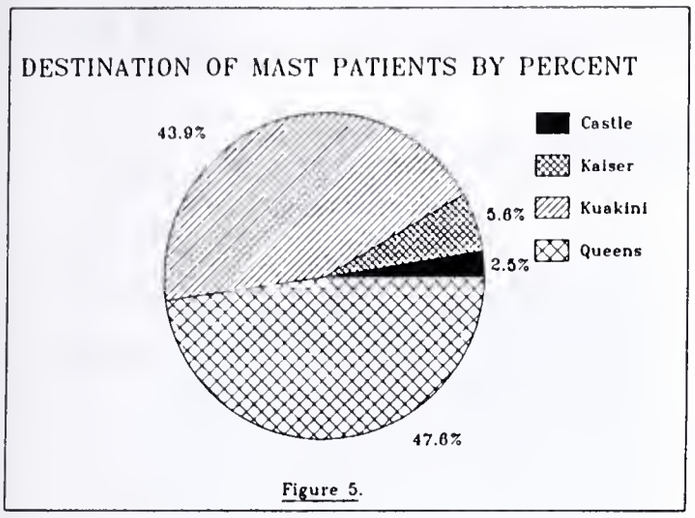


Figure 5.

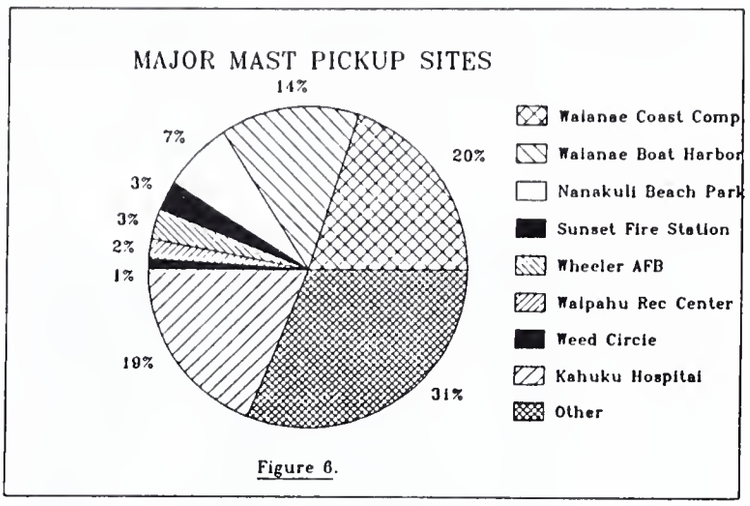


Figure 6.

from the heliports at Queen's and Kuakini by ambulance. Castle and Kaiser Hospitals received a much smaller share of the patients (2.5% and 5.8% respectively). These percentages probably reflect the fact that most transport on the windward side is by land, since it takes a relatively short time to reach Castle Hospital; Kaiser Permanente Hospital's helipad was not functional until September 1985. (Not shown in Figure 5 is one patient who was transported to the Kewalo Basin Barometric Chamber.)

Most of the missions (68.5%) were flown to well-known pick-up sites (Figure 6). Three of the 4 most frequently used sites were on the Waianae Coast and accounted for just over 40% of the flights. The North Shore was the next most frequent sites, accounting for 23% of the flights. About one-third, or 148, of the missions were dispatched to a variety of sites, many new and unfamiliar, such as highways, state parks, schools and recreation facilities.

Table 1 shows the flight times involved in missions to the 3 most frequently used pick-up sites. On an average it was only 4.9 minutes from the time the radio-telephone operator received a call to the time when the aircraft was in the air. Most patients arrived at the hospital in about 42 minutes after MAST was activated. Ground time may be prolonged if the patient requires stabilization before the flight.

Table 2 shows the component times involved in transport of the neonatal team for 3 flights (the only data available during the study time) to Kahuku Hospital. The first column reflects the time for personnel and equipment to be assembled and then driven to the Kuakini Hospital heliport for takeoff. The helicopter is ready for departure from Kuakini by the time the team arrives. The

Table 1. Average Flight Time to Three Major Pickup Sites (minutes)

	WCCHC N=31	Kahuku Hospital N=30	Waianae Boat Harbor N=15
Flight Time*	11.9	20.3	11.1
Ground Time	8.4	7.8	6.2
Flight Time to Hospital	14.5	15.3	15.9
Total Flight Time	**39.7**	**48.3**	**38.1**

* Includes 4.9 minutes from time call is received until aircraft is airborne.

Table 2. Flight Times to Kahuku Hospital with the Neonatal Team (minutes)

Flight #	Aircraft Depart Hickam AFB*	Flight Time to Kahuku**	Time on Site	Flight to Kuakini
1	29	49	67	26
2	15	27	30	20
3	13	48	31	34

* Time aircraft waits at Hickam until neonatal team and equipment are assembled.
** Time includes flight from Hickam to Kuakini and then to Kahuku Hospital.

Table 3. Operational Status for Frequently Used Helicopter Landing Sites

	Heli-Pad	Windsock	Lights
Pickup Sites:			
WCCHC	no	yes	no
Waianae Harbor	no	no	no
Nanakuli	no	no	no
Kahuku	yes	yes	yes
Drop Off Sites:			
Queens	yes	yes	yes
Kuakini	yes	yes	yes
Castle	yes	yes	yes
Kaiser	yes	yes	yes

Table 4. Medical Equipment/Capabilities Available During Flight

- Vitals except blood pressure
- Lifepack 4 monitor with defibrillation capability
- 100% oxygen with demand or free flow
- Intubation
- IV therapy
- Drug box with IV and oral medications for use under physician orders
- Electrical suction
- EKG
- Delivery pack
- Burn pack
- Splint set
- On call hoist extraction kit and stokes litter
- Medicom radio communications (presently being installed)

Table 5. MAST Crew Qualifications

Flight Medic
- Graduate of 10-week Combat Medic Training course, Ft. Sam Houston, Texas
- EMT basic 110-hour course
- Completion of 90-day Air Crew Training Program involving skills unique to flight medic
- Graduate of 360-hour EMT course at Tripler Army Medical Center*
- Minimum of 3 years experience as medic

Pilot in Command
- Graduate of US Army Rotary Wing School, Ft. Rucker, Alabama
- Selected from instrument and night qualified applicants with history of superior flight proficiency for flying local missions
- Graduate of Essential Medical Training Course, 3 weeks, Ft. Sam Houston, Texas

Co-Pilot
- Graduate of US Army Rotary Wing School, Ft. Rucker, Alabama
- Instrument and night qualified
- Graduate of Essential Medical Training Course, 3 weeks, Ft. Sam Houston, Texas

Crew Chief
- Graduate of US Army Crew Chief School, 10 weeks, Ft. Rucker, Alabama
- Completion of 90-day Air Crew Training Program involving skills unique to crew chief
- CPR qualified
- Minimum of 3 years experience as crew chief

* Training equivalent to KCC course required for EMT State certification

flight time to Kahuku varied, depending on weather conditions that necessitated a different flight path. The total times for the neonatal team to arrive at Kahuku Hospital for each flight were 78, 42 and 62 minutes respectively.

The times on site at Kahuku varied according to how long it took to prepare the patient for transport, but that information was not available to us. The cumulative time for the team to arrive back at Kuakini after MAST activation was 2 hours 6 minutes, 1 hour 32 minutes and 2 hours 6 minutes respectively. This does not include the additional time needed for transport from Kuakini to Kapiolani Medical Center.

Comment

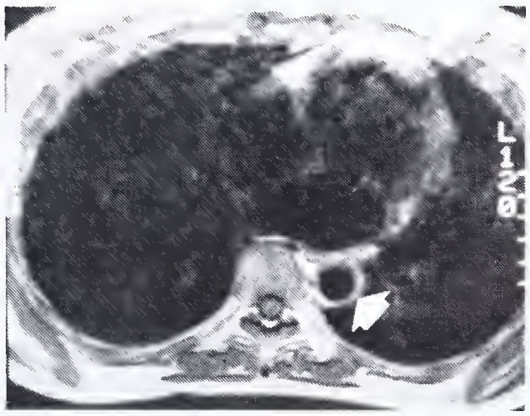
1. Capability

The 68th Medical Detachment offers the MAST service to the community 24 hours a day, 365 days a year. In order to provide this level of continuous service, it has 6 dedicated helicopters with a trained staff of 55 personnel, including flight 8 flight medics and 15 pilots.

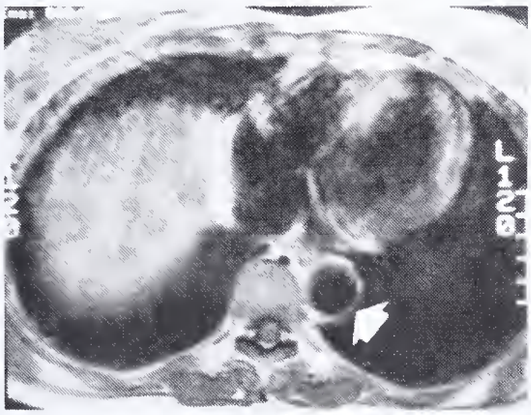
Each flight medic has a minimum of 3 years experience and substantial emergency medical training. Everyone is a nationally registered emergency medical technician (EMT) and a graduate of the EMT training course at Tripler Army Medical Center. They are recognized by the State as Level I EMTs (Table 5). Because the helicopters are well-stocked with medical supplies and equipment (Table 4), the flight medics are able to monitor patients and perform emergency procedures when necessary. Although 50% of the patients were considered critical or extremely critical, there were no recorded in-flight deaths. The flight medics have shown the capability to ►

MRI CASE OF THE MONTH

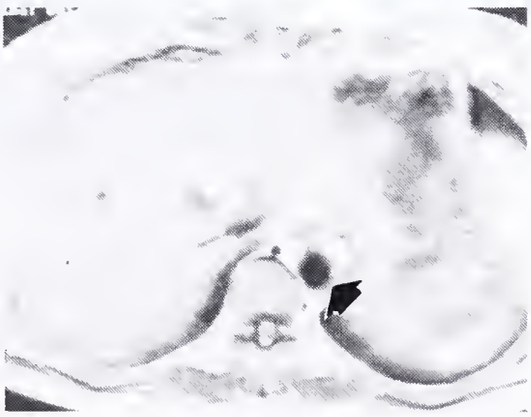
TAKAYASU'S AORTITIS



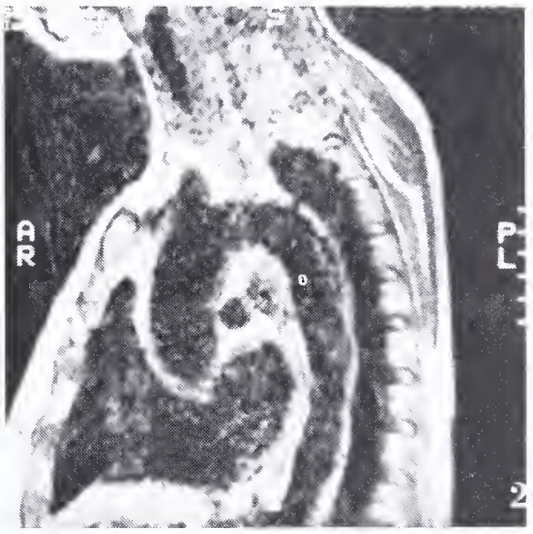
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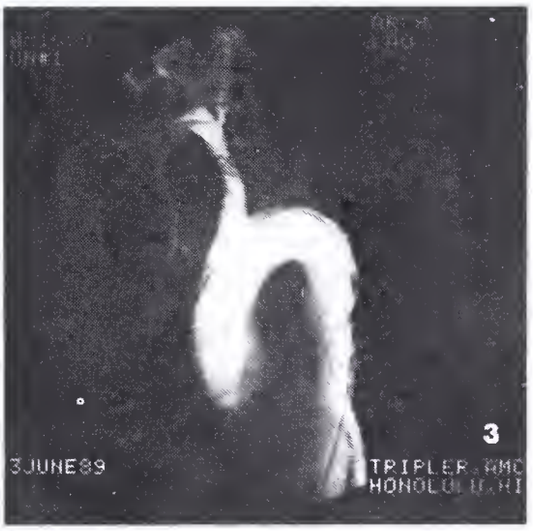
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1c



2



3

Radiologic Diagnosis: 1 a, b, c: Axial MR of the thorax demonstrates the variation in diameter of the descending aorta (arrow) at different levels from superior to inferior. 2: Sagittal MR imaging demonstrates the irregularity of the descending aorta, and lack of branches arising at the arch. 3: Digital angiogram confirms the innominate artery as the only blood vessel still patent off of the aortic arch.

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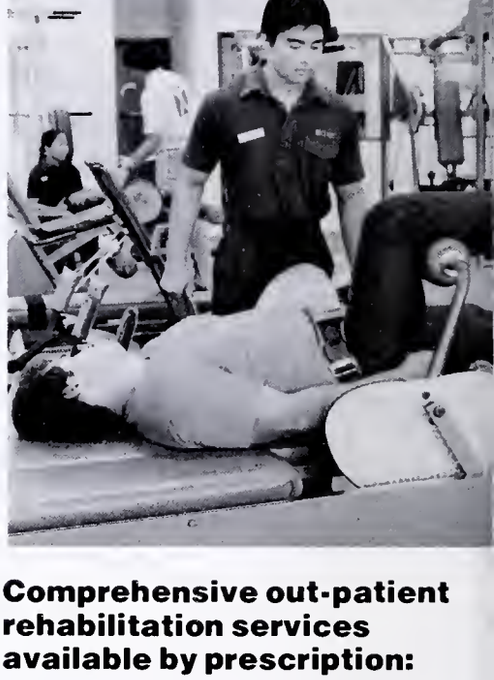
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handle a variety of medical and trauma cases adequately (Figure 1).

The pilots are chosen from among the top graduates of the Army flight school and are highly qualified for the demanding and often non-routine missions. They have an excellent safety record. Likewise, the crew chiefs are experienced, trained for the special handling of patients for medical evacuation.

2. Effectiveness

The MAST service provides rapid transport of critically ill patients from rural Oahu to Honolulu hospitals. Total time from dispatch to hospital averages about 42 minutes and, in effect, only 15 minutes after lift off from one of the outlying medical facilities. As stated above, one-quarter of the missions were flown between 4 and 8 PM, a time when land transport would be severely hampered by rush-hour traffic.

Only 6% of the cases (Figure 4) were judged to be minor by the flight medics, suggesting that the use of this part of the EMS system was largely appropriate.

Radios have recently been installed in all the helicopters; this will allow for in-flight communication with the receiving physician for orders and status reports. This will also permit the administration of stat medications in flight.

3.Safety

Recent attention nationwide has been focused on the higher than expected in-flight fatalities associated with helicopter evacuation systems. The combination of highly trained pilots and well-maintained aircraft in Hawaii has produced a superlative record. In the course of 3,000 missions during the 15-year history of the service, there has been not one recorded accident, except for a single incident involving a helicopter blade striking a power line. However, this resulted in no injury to personnel, nor significant aircraft damage, and the mission was completed successfully. This is an excellent record, particularly in view of flying one-third of the missions to unfamiliar sites (Figure 6) for pick-ups, and half the missions taking place at dusk or in darkness. (Figure 2).

Nonetheless, Table 3 points out that presently designated landing sites could be upgraded to include a helipad, lighting and a wind sock. These improvements might help safeguard against future potential accidents. Developing other prepared landing sites would help reduce the use of numerous non-routine landing sites of a hazardous nature.

4. Future look

Studies have shown that intervention within the first hour following trauma is critical for improving survival. Unfortunately, due to restrictions on our study, we were not able to relate patient outcomes to transport. Future research might review a small subset of those transported, in order to assess ground versus air transport with the object being how to improve or enhance the service.

Support for the neonate in critical situations in the past has been effected by transporting the neonatal team to the outlying facility. On the average, in our small sample, it took almost 1 hour for the team to arrive on the scene. This time could be drastically reduced if the team could be flown directly from Kapiolani Medical Center. Although discussions have been in progress for years, resolution of the obstacles to establishing a helipad at KMCWC is needed. Certainly the number of patients transported under the age of 16, as shown above, should add support to planning for such a helipad in the future.

Summary

MAST has provided a safe and reliable method of rapid transport of critically ill patients from outlying areas to hospitals on Oahu. The professional integrity of the unit is displayed in view of the variable caseload and the successful missions completed without accident over its 15-year history. Improvement in communications and in proper sites being established will promote better in-flight care and prevent potential mishaps in the future. Inappropriate utilization does not appear to be a problem. The MAST service is a major resource to the health of the community; it is an integral part of the State's emergency medical system.■

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Asymptomatic intrathoracic extramedullary hematopoiesis: A report of three cases

Tomoko Murakami, BA*
Andrew C. Dixon, MD**
Reginald C.S. Ho, MD†
Jeffrey M. Nakamura, MD††

Medical student Tomoko Murakami, visiting Hawaii from Brown University Program in Medicine at Providence, Rhode Island, is to be congratulated for an excellent piece of work done and reported in this issue of the JOURNAL.

She has exemplified one of our goals: To submit in the JOURNAL studies and research done in Hawaii, and of interest to Hawaii physicians in particular, namely the article on "Asymptomatic Intrathoracic Extramedullary Hematopoiesis."

The reporting of actual cases makes "the lesson" stick in our minds.

We thank Jeff Nakamura, DME at Kuakini, for being Tomoko's introducer and presumably her preceptor.

The Editor

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Extramedullary hematopoiesis (EMH) is observed in people suffering from severe anemia of prolonged duration and appears to be a compensatory mechanism for disturbed medullary hematopoiesis. The hemoglobinopathies (such as thalassemia, spherocytosis, and sickle cell disease), neoplastic diseases such as leukemia and lymphoma, and others, including myelofibrosis and osteitis fibrosa cystica, are associated with EMH. These diseases and their resultant anemia have in common the ability to stimulate erythropoietin production, which in turn may stimulate hematopoiesis in organs of mesenchymal origin.

The liver and spleen are the most common sites of EMH; however, other sites, including the falx cerebri, thoracic cavity, retroperitoneal area and pelvis have been reported[1]. When present, intrathoracic EMH is most frequently associated with thalassemia[2,3]. Spinal cord compression and hemothorax have also been reported as complications of intrathoracic EMH[2,4,12].

We report 3 cases of asymptomatic intrathoracic EMH, all of which presented as mass lesions. Two of these were associated with b-thalassemia intermedia and 1 with thalassemia-hemoglobin E disease.

Case 1

A 26-year-old Chinese woman was admitted to hospital for the evaluation of an intrathoracic mass. She had been diagnosed as having *b*-thalassemia intermedia at age 20. At that time, hemoglobin electropheresis demonstrated Hg F 65.6% and Hg A 5.2%, and a chest X-ray (CRX) demonstrated a right posterior thoracic mass measuring 4 x 10 cm. She was followed over the next 5 years, and only on 1 occasion did she require transfusion therapy for symptomatic anemia.

At the age of 25, the patient was referred for hematological evaluation. At that time, her right posterior mediastinal mass was noted to have doubled in size (11 x 9.5 cm) when compared to her CXR of 2 years previous (Figure 1). A subsequent computed tomogram (CT) scan of the chest demonstrated non-contrast-enhanc- ►

ing, bilateral, paraspinal masses extending from the diaphragm to the carina (Figure 2). A magnetic resonance scan found similar findings (Figure 3). Bony abnormalities of the ribs were also noted. An abdominal CT confirmed the presence of hepato-splenomegaly. A CT scan-directed needle biopsy of her thoracic mass was performed, revealing fibrocollagenous tissue with lymphocytic infiltrate.

Because of the concern that this mass might represent a lymphoma, a thoracotomy was performed. Intraoperatively, a large, multilobulated, extremely vascular mass was found in the right paraspinal area. The mass was hemorrhagic and gelatinous; however, it was not adherent to the lung. Because of its vascularity and adherence to the ribs, it was not possible to resect the mass completely. Pathologic review of the portion resected revealed hematopoietic tissue (Figure 4). Postoperatively, the patient remained asymptomatic and since then has not acquired transfusions. Although it was offered to her, the patient has refused radiation therapy to the intrathoracic mass.

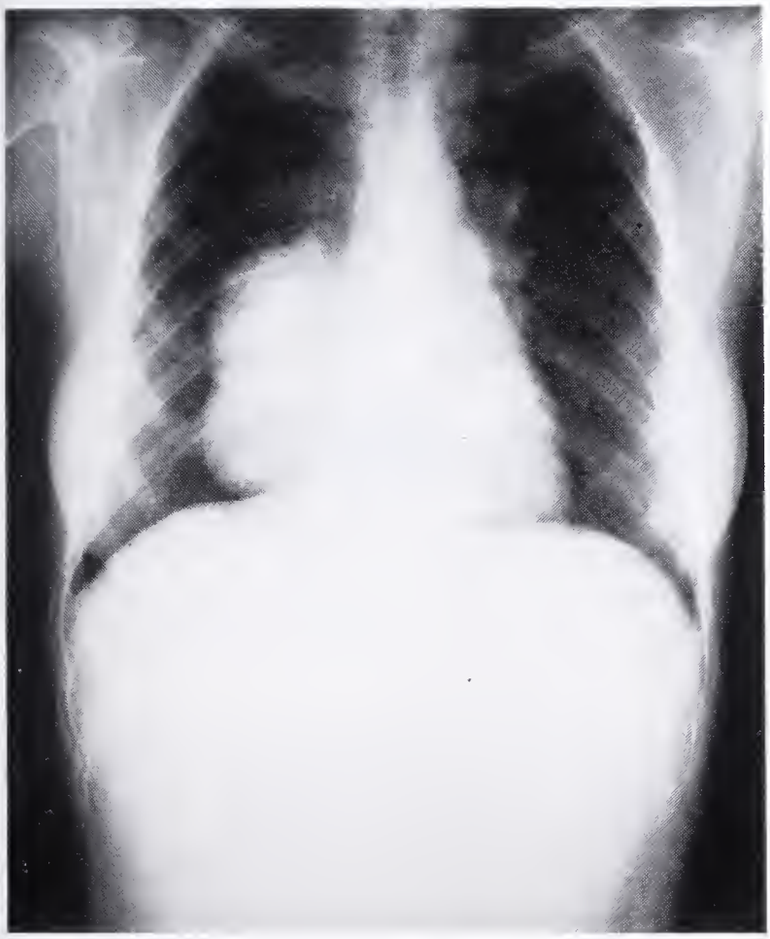


Figure 1: Chest roentgenogram of Case 1 demonstrating a large intrathoracic mass.

Case 2

A 36-year-old Caucasian woman had been diagnosed as having *b*-thalassemia intermedia at the age of 8. At 13 years of age, she began to develop splenomegaly and transfusion-defendent anemia. Because of symptomatic splenomegaly and thrombocytopenia, she underwent splenectomy at the age of 26. Five years later, the patient presented herself to us with tender hepatomegaly, jaun- ►



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3 The use of potassium salts in patients receiving diuretics for uncomplicated essential hypertension is often unnecessary when such patients have a normal dietary pattern. Serum potassium should be checked periodically, however, and if hypokalemia occurs, dietary supplementation with potassium-containing foods may be adequate to control milder cases. In more severe cases supplementation with potassium salts may be indicated.

CONTRAINDICATIONS: Potassium supplements are contraindicated in patients with hyperkalemia since a further increase in serum potassium concentration in such patients can produce cardiac arrest. Hyperkalemia may complicate any of the following conditions: Chronic renal failure, systemic acidosis such as diabetic acidosis, acute dehydration, extensive tissue breakdown as in severe burns, adrenal insufficiency, or the administration of a potassium-sparing diuretic (e.g., spironolactone, triamterene).

Wax-matrix potassium chloride preparations have produced esophageal ulceration in certain cardiac patients with esophageal compression due to enlarged left atrium.

All solid dosage forms of potassium chloride supplements are contraindicated in any patient in whom there is cause for arrest or delay in tablet passage through the gastrointestinal tract. In these instances, potassium supplementation should be with a liquid preparation.

WARNINGS: Hyperkalemia—In patients with impaired mechanisms for excreting potassium, the administration of potassium salts can produce hyperkalemia and cardiac arrest. This occurs most commonly in patients given potassium by the intravenous route but may also occur in patients given potassium orally. Potentially fatal hyperkalemia can develop rapidly and be asymptomatic. The use of potassium salts in patients with chronic renal disease, or any other condition which impairs potassium excretion, requires particularly careful monitoring of the serum potassium concentration and appropriate dosage adjustment.

Interaction with Potassium Sparing Diuretics—Hypokalemia should not be treated by the concomitant administration of potassium salts and a potassium-sparing diuretic (e.g., spironolactone or triamterene) since the simultaneous administration of these agents can produce severe hyperkalemia.

Gastrointestinal Lesions—Potassium chloride tablets have produced stenotic and/or ulcerative lesions of the small bowel and deaths. These lesions are caused by a high localized concentration of potassium ion in the region of a rapidly dissolving tablet, which injures the bowel wall and thereby produces obstruction, hemorrhage or perforation.

K-DUR tablets contain micro-crystalloids which disperse upon disintegration of the tablet. These micro-crystalloids are formulated to provide a controlled release of potassium chloride. The dispersibility of the micro-crystalloids and the controlled release of ions from them are intended to minimize the possibility of a high local concentration near the gastrointestinal mucosa and the ability of the KCl to cause stenosis or ulceration. Other means of accomplishing this (e.g., incorporation of potassium chloride into a wax matrix) have reduced the frequency of such lesions to less than one per 100,000 patient years (compared to 40–50 per 100,000 patient years with enteric-coated potassium chloride) but have not eliminated them. The frequency of GI lesions with K-DUR tablets is, at present, unknown. K-DUR tablets should be discontinued immediately and the possibility of bowel obstruction or perforation considered if severe vomiting, abdominal pain, distention, or gastrointestinal bleeding occurs.

Metabolic Acidosis—Hypokalemia in patients with metabolic acidosis should be treated with an alkalinizing potassium salt such as potassium bicarbonate, potassium citrate, potassium acetate, or potassium gluconate.

PRECAUTIONS: The diagnosis of potassium depletion is ordinarily made by demonstrating hypokalemia in a patient with a clinical history suggesting some cause for potassium depletion. In interpreting the serum potassium level, the physician should bear in mind that acute alkalosis per se can produce hypokalemia in the absence of a deficit in total body potassium while acute acidosis per se can increase the serum potassium concentration into the normal range even in the presence of a reduced total body potassium. The treatment of potassium depletion, particularly in the presence of cardiac disease, renal disease, or acidosis requires careful attention to acid-base balance and appropriate monitoring of serum electrolytes, the electrocardiogram, and the clinical status of the patient.

Laboratory Tests: Regular serum potassium determinations are recommended. In addition, during the treatment of potassium depletion, careful attention should be paid to acid-base balance, other serum electrolyte levels, the electrocardiogram, and the clinical status of the patient, particularly in the presence of cardiac disease, renal disease, or acidosis.

Drug Interactions: Potassium-sparing diuretics; see **WARNINGS**.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Long-term carcinogenicity studies in animals have not been performed.

Pregnancy Category C: Animal reproduction studies have not been conducted with K-DUR. It is also not known whether K-DUR can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. K-DUR should be given to a pregnant woman only if clearly needed.

Nursing Mothers: The normal potassium ion content of human milk is about 13 mEq per liter. Since oral potassium becomes part of the body potassium pool, so long as body potassium is not excessive, the contribution of potassium chloride supplementation should have little or no effect on the level in human milk.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS: One of the most severe adverse effects is hyperkalemia (see **CONTRAINDICATIONS, WARNINGS,** and **OVERDOSAGE).** There have also been reports of upper and lower gastrointestinal conditions including obstruction, bleeding, ulceration, and perforation (see **CONTRAINDICATIONS** and **WARNINGS);** other factors known to be associated with such conditions were present in many of these patients.

The most common adverse reactions to oral potassium salts are nausea, vomiting, abdominal discomfort, and diarrhea. These symptoms are due to irritation of the gastrointestinal tract and are best managed by taking the dose with meals or reducing the dose.

Skin rash has been reported rarely.

OVERDOSAGE: The administration of oral potassium salts to persons with normal excretory mechanisms for potassium rarely causes serious hyperkalemia. However, if excretory mechanisms are impaired or if potassium is administered too rapidly intravenously, potentially fatal hyperkalemia can result (see **CONTRAINDICATIONS** and **WARNINGS**). It is important to recognize that hyperkalemia is usually asymptomatic and may be manifested only by an increased serum potassium concentration and characteristic electrocardiographic changes (peaking of T-waves, loss of P-waves, depression of S-T segment, and prolongation of the DT-interval). Late manifestations include muscle-paralysis and cardiovascular collapse from cardiac arrest.

Treatment measures for hyperkalemia include the following:

1. Elimination of foods and medications containing potassium and of potassium-sparing diuretics.

2. Intravenous administration of 300 to 500 ml/hr of 10% dextrose solution containing 10–20 units of insulin per 1,000 ml.

3 Correction of acidosis, if present, with intravenous sodium bicarbonate.

4 Use of exchange resins, hemodialysis, or peritoneal dialysis.

In treating hyperkalemia, it should be recalled that in patients who have been stabilized on digitalis, too rapid a lowering of the serum potassium concentration can produce digitalis toxicity.

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ASYMPTOMATIC *(Continued)*

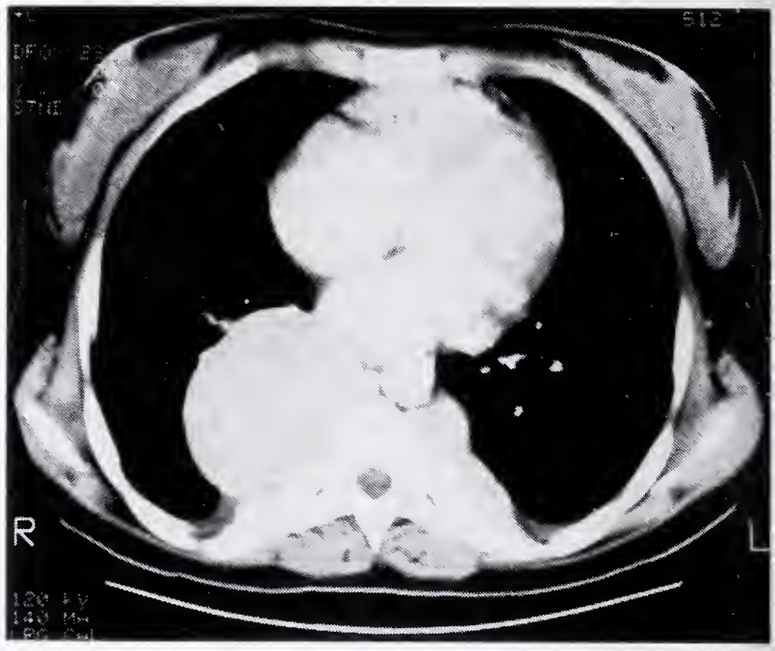


Figure 2: Computerized tomographic scan of Case 1 demonstrating large, non-contrast enhancing, paraspinal masses.

dice and elevated liver function tests. Serum iron, ferritin and iron-binding capacity were all elevated. A liver scan confirmed hepatomegaly, and a liver biopsy revealed increased iron stores with a minimal fibrosis. A diagnosis of hemochromatosis was made and the patient was treated with deferoxamine with resolution of her symptoms.

At the age of 35, a routine CXR noted a 3 x 1 cm soft tissue density in the left upper paravertebral area. A CT scan of the chest revealed a left paraspinal soft tissue mass measuring 2.5 x 1.5 cm. The mass was noted to be contiguous with the vertebral body, but without evidence of bony destruction. A similar mass of 1 x 1.5 cm was also noted in the right paraspinal area. Both were considered to be solid masses by mild contrast enhancement. These masses are presumed to be sites of EMH and the patient has been followed by sequential chest CT scans, which to date have not detected any progression in the size of the masses.

Case 3

A 29-year-old man of Filipino and Japanese ancestry was admitted to the hospital because of a painful enlarging left abdominal mass. At the age of 5, he and his brother had been diagnosed as having thalassemia-hemoglobin E disease. Although mildly anemic, the patient had never required transfusion therapy.

Admission physical examination revealed tender splenomegaly with the spleen tip 15cm below the left costal margin. The patient was mildly jaundiced; however, there was no adenopathy or hepatomegaly. A hemoglobin electrophoresis showed 40% Hg F and 60% Hg E. An abdominal CT revealed an enlarged but intact spleen. The bone marrow was hypercellular with marked erythroid hyperplasia and a myeloid to erythroid ratio of 1:10. A CT of the chest revealed a 4 x 4 cm mass at the superior segment of the right lower lobe and another 4 x 4 cm mass at the left superior mediastinum.

►

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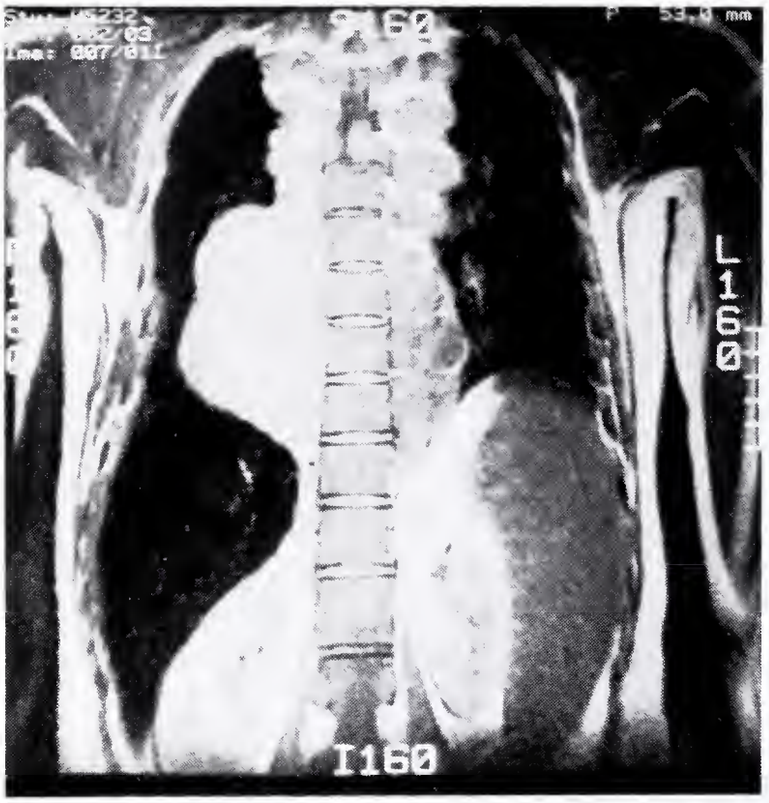


Figure 3: Magnetic resonance image of Case 1 demonstrating large paraspinal masses.

Because of the patient's clinical history, his masses were suspected to be extramedullary hematopoietic tissue. An attempt to identify the nature of the intrathoracic masses by Technetium 99m sulfur colloid scanning (Tc 99m SC) was unsuccessful. The splenic pain subsided soon thereafter, without any therapy, and at the present time the patient remains asymptomatic.

Discussion

Antemortem diagnosis of intrathoracic EMH was first made by Ask-Upmark in 1945[1]. Numerous case reports have since appeared, often focusing on the most severe complication, namely spinal cord compression[2,5-12]. The usual presentation of EMH is an asymptomatic individual who is found by routine radiological examination to have a mass. Our patients typify this presentation (Table 1).

Thalassemia intermedia, in 2 of our patients, has been reported to be the most common cause of intrathoracic EMH[13]. It has been suggested that patients with thalassemia intermedia may have a less severe anemia than those with thalassemia major. These patients require fewer transfusions, and, therefore, have less suppression of erythropoiesis[13]. The increased erythroid stimulus, when the suppression of erythropoiesis by transfusions is not in the picture, may be the pathophysiologic mechanism of EMH in these patients[14]. Our patients, all of whom presented with large intrathoracic masses, had received a minimum of transfusions prior to the discovery of their EMH.

Differentiating intrathoracic EMH from other intrathoracic masses should be based on the history of an underlying hematologic process and the patient's age, but it can be assisted by the use of several radiologic studies [2,4,9,13,15,16]. Computed tomography is helpful in the assessment of paraspinal EMH, especially when the use of intravenous contrast medium can show enhancement of the mass image[4,5]. In 2 of our patients (Cases 1 and 2), however, the mass image was not enhanced by contrast CT scan, a finding of some surprise, given the extreme vascularity the tissue.

Another technique that has been reported is the use of Tc 99m SC[17,18]. Tc 99m SC is trapped in reticulo-endothelial cells, and therefore causes enhancement of the image of EMH. This method also failed to delineate intrathoracic mass in 1 of our patients (Case 3). Other groups have also experienced failure with this procedure[19].

EMH is usually a benign condition, and its treatment may actually be deleterious. Due to the removal of a compensatory source of erythropoiesis and the exacerbation of the underlying anemia[4]. Instead, it may be better to monitor the size of the mass by periodic radiologic examinations, in order to prevent the complications of spinal cord compression for example.

The therapy required for symptomatic EMH is still unknown. In spinal cord compression, the older literature

Table 1. Clinical characteristics of three patients with intrathoracic extramedullary hematopoiesis.

Case #	Age/Sex/ Ethnic background	Hemoglobinopathy	Hemoglobin Electrophoresis	Treatment Received	Age of Mass Discovery	Serum Hemoglobin (g/dl)
1	26/F Chinese	*b*-thalessemia intermedia	HgF 65.6% HgA 5.2%	minimal transfusions	20	8.8
2	36/F Caucasian	*b*-thalessemia intermedia	not available	moderate transfusions splenectomy deferoxamine	35	8.8
3	29/M Filipino/ Japanese	thalassemia hemoglobin E	HgF 40% HgE 60%	none	29	8.0

appears to favor surgical decompression followed by low-dose radiation[6,9]; however resection alone seemed to be inadequate due to the diffuse nature of this process[10].

Repeated transfusions in conjunction with partial surgical resection appears to have fallen out of favor more recently[8]. This is because of the inherent risks of repetitive transfusions, the risks of a surgical procedure and the lack of side effects of radiotherapy[8]. Transfusion therapy alone has been used in a few patients with spinal cord compression, resulting in initial symptomatic improvement; however, recurrence of symptoms inevitably occurred[7].

Recent literature suggests the EMH is highly radiosensitive, and that when required, radiation therapy should be considered the treatment of choice[5,7,8,10]. Low-dose radiation (10-16 Gy) has in 1 study been reported to be adequate[10]. Because the mass may provide a significant proportion of the total body necessary hematopoiesis, patients treated with irradiation should be monitored closely for the subsequent development of anemia, thrombocytopenia and granulocytopenia[10].

The pathogenesis of EMH has been extensively discussed elsewhere and continues to remain controversial[3,11]. Saleeby and later Ask-Upmark both suggested an embolic origin[1,20]. Autopsy findings of intercostal veins filled with hematopoietic tissue, reported by Cone, favored this hypothesis[21]. Activation of precursor cells in extradural tissue of mesodermal origin has also been suggested[22]. Lastly, direct extension of hyperplastic medullary tissue through thinned bony trabeculae was suggested by Lyall and has been confirmed by a finding of EMH within the capsule of the periosteum[23,24].

Conclusion

We have reported 3 patients with asymptomatic EMH presenting with large intrathoracic masses. The diagnoses were established by the clinical histories of hemoglobinopathy, by radiographic studies, and in 1 patient by open thoracotomy. In most situations, invasive diagnostic procedures are not required in asymptomatic EMH. Treatment, when necesary, can usually be limited to irradiation.■

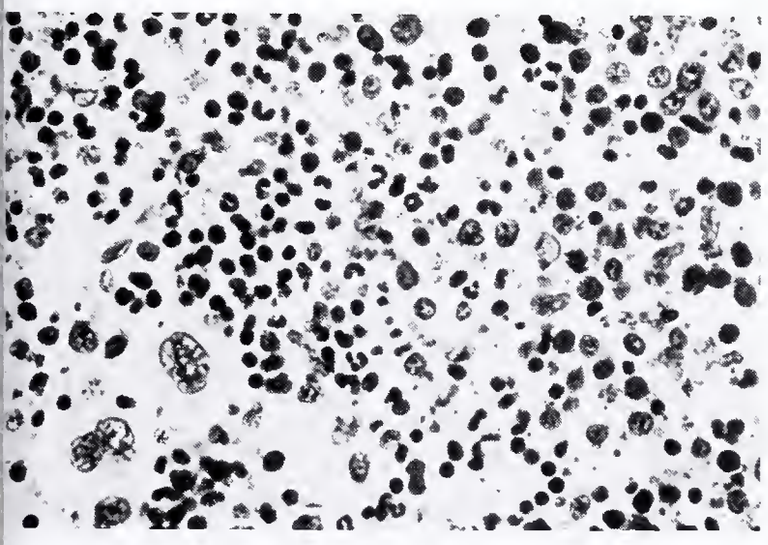


Figure 4: Pathologic specimen of the resected mass from Case 1 showing normal hematopoietic tissue.

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Indications: Yocon® is indicated as a sympathicolytic and mydriatric. It may have activity as an aphrodisiac.

Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.[1,2] Also dizziness, headache, skin flushing reported when used orally.[1,3]

Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.[1,3,4] 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to ½ tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.[3]

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Reader's Express Their Views

People are divided into only two groups — the righteous and unrighteous — and the righteous do the dividing.

Therese Padua, writing in the Sunday *Star-Bulletin and Advertiser,* July 23, composed a review of radial keratotomy, as viewed by ophthalmological experts on Oahu. Her story appeared to be a fair summary of the state of the art. The report was titled "Eye doctors divided on surgery for myopia," but nowhere is it mentioned that the division is 9-to-1 against, but she names the Hawaii surgeons known to be performing RK today (*one* surgeon was pictured(?)). Little mention was made as to the future of refractive surgery, and the probability that RK is but a step in the evolution of corneal/ocular tissue modification. When a truly predictable safe procedure is available, we will read lugubrious anecdotes about the "heartbreak of myopia!" then we will be treated to a raucous cacophony of energy and invention, idealism and hucksterism — oh what an exciting and boisterous time it will be for America and the free world.

To speak ill of others is a dishonest way of praising ourselves; let us be above such transparent egotism.

Dr. George Weinstein is secretary of the AAO Public and Professional Information Committee. With a stroke of misguided altruism, he provided fodder for ophthalmology's critics when he discussed "inappropriate care for patients with cataracts" with the media, including NBC's *Today Show* and some magazine articles. While no one would defend the "black hat" surgeon, it makes no sense to further divide our ranks with broad and meaningless public statements. Such behavior serves only to cause doubt for our patients, dissension within our ranks, and cynical nods from our medical colleagues. The bad guys in medicine deserve to be defined, identified and attacked; the broad red pen should be reserved for the art department.

No matter which way you ride, it's uphill and against the wind.

Much of tort reform legislation finally pushed through state legislatures is often deemed unconstitutional by the State Supreme courts. In an effort to avoid this too frequent veto, Professor Jeffrey O'Connell of the University of Virginia School of Law was asked to expound on appropriate language. With elastic legal acumen, the professor said the ultimate outcome depends on the politics of the court. If a majority supports the principle of tort reform, it will find a way to uphold the legislation, but if a majority opposes reform, it will find some way to strike it down. Does all this sound familiar?

Aloha and keep the faith.

Russell T. Stodd, MD
From "The Weathervane"
Vol. 6, No. 6, August 1989



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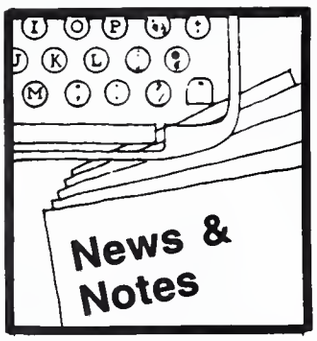
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Professional Moves

June: Central Medical Clinic endocrinologist Rae R. Nagao announced that she will be now known as Rae N. Teramoto, MD.

July: Psychiatrist George Schnack announced his retirement effective July 26 . . . Psychiatrist John Purtzer will assume care of his patients at QOB Ste. 900 . . .

General Surgeon Mark Mugiishi joined the Central Medical Clinic at Kuakini Medical Plaza, Ste. 201 . . .

Life in These Parts

A male Filipino Hansen's Disease patient in his 80s was on B6G3, which is very photosensitizing. The visiting PHN became curious when he would ask for two bottles of sunscreen every week . . . He was rubbing the sunscreen over his whole body several times a day . . . The PHN took along an Ilocano interpreter on her next visit . . . He was taking two Dapsone tabs daily instead of the prescribed one because he felt the pills being so small, one would not be enough . . . He demonstrated how he faithfully used his glaucoma eye drops three times daily . . . When he tipped his head back, the drops went into his open mouth instead of his afflicted eye . . . At this point, the PHN shrewdly decided that the problem was not language, but hearing. He was sent to an otologist, who discovered that he was totally deaf and qualified for a hearing aid . . . (As related by Hilo PHN Patsy Matsuura)

We learned from Advertiser columnist Don Chapman's "Dis and Dot" column that "Mark Grief of Castle Medical Center is really a very cheerful fellow . . ."

More Dis and Dot: "Dr. Steven Berman, the infectious-disease specialist who had helped operate on Ferdinand Marcos (who had been suffering from a mysterious fever), was spotted afterward leaving the St. Francis parking lot in a white Porsche with license plates 'FEVER' . . ."

Do As I Say — Not As I Do

Cardiologist Bill Dang Jr. always advises his patients on low cholesterol, low fat alternatives, such as chicken and fish . . . "But if you must have a burger, grilled is better than fried in oil . . . To make the diet palatable, we make a few allowances . . . I have to admit I eat at fast-food places myself. When I have a lapse of reason, I head to McDonald's." His usual order is a Quarter Pounder with cheese . . . (Excerpts from "Celebrate the Fourth with a Burger" by Nadine Kam, Star-Bulletin.)

Ideals Conflict with Death Penalty

Honolulu pathologist Terence Allen says he will not appear on Sept. 11, as ordered, at the Los Angeles County Courthouse to testify in the trial of a Stanley Davis, 23, because he does not believe in the death penalty . . . Terence was medical examiner in L.A. from 1983 to February 1986 and autopsied the two victims shot in the head by four men including Davis. Terence left the L.A. medical examiner's office because he "didn't like the involvement in death penalty cases." Terence would face contempt-of-court charges here for defying a Hawaii Circuit Court judge's order . . .

Honored: In June, Cal Sia was awarded one of five American Academy of Pediatrics Special Achievement Awards in Washington, D.C., at the group's District VI meeting for his child-advocacy work . . .

Polio's Second Wave

"Post-polio syndrome" strikes polio survivors about 30 years after the initial infection. A two-year study by the UH Rehabilitation Research and Training Center predicts that about 20% of polio survivors in Hawaii may have the syndrome . . . Gary Okamoto, director of Hawaii's first Post-Polio Clinic says the patients show up with increasing muscle and joint weakness and pain, extreme fatigue and sometimes breathing difficulty and heightened sensitivity to cold . . .

The Miracle

Kerry Harimoto, born July 11, 1988, was four months premature . . . and is the first such premie to survive in Hawaii . . . When OB man Francis Terada delivered Kerry, the 1-pound, 3-ounce body fit in his palm, but Kerry was alive and kicking, though the eyes were fused shut and the lungs not fully developed . . . Kerry was moved into the intensive-care nursery under pediatrician Franklin Young's care . . . Today Kerry is a cheerful, friendly child and even the $300,000 to $400,000 worth of bills were covered by insurance . . . Breene Harimoto, Kerry's mother, says "Kerry is a miracle."

Ciguatera Poisoning

UH School of Medicine researcher Yoshitsugi Hokama has developed a simple biochemical color test that indicates the presence of ciguatera toxin. The test is "1,000% effective in tests since 1980" . . . Yoshitsugi, who has done most of the research on ciguatera, says the term ciguatera was derived from an incident in Cuba in the 1600s, when sailors got sick from eating a shellfish known as the cigua (turban shell) . . . Captain Cook's crew in New Caledonia during the 1700s suffered fish poisoning, which they called "ciguatera" and fish poisoning has been synonymous with ciguatera since. A brown algae called *Gambia discus toxicus* is the culprit. The algae blooms in areas where currents are less and where the ecosystem has been disturbed, e.g., in construction or dredging or even Hurricane Iwa. Without the benefit of laboratory or his stick test, Yoshitsugi advises the average fisherman to avoid areas of known contamination, or try the fish first as sashimi since sashimi is 85% water. Cooking dehydrates the fish and concentrates the toxin. "Try the sashimi and wait 24 hours to be sure it is okay . . ." Severe ciguatera may be treated with mannitol, but mannitol is not an antidote and only good to treat the acute phase and to flush out the toxin. Usually 250cc in a 20% solution i.v. is used to restore dehydration, but it won't stop diarrhea because it is not an antidote. The Big Island has the most cases of reported ciguatera and DOH has shown that from 1984 to 1988, most incidences involved ulua, followed closely by papio and kole. The DOH warns fishermen to avoid areas prone to infected fish and not to eat heads or organs, where the toxin is concentrated. The toxin is not destroyed by cooking, freezing, drying or salting — according to DOH physician James Gollop . . .

Positive Steps to Beat Depression in the Elderly (From Fifty Plus, *July 21 issue)*

General:

- 5-20% of the elderly are depressed, especially in long-term care setting
- Many feel it is normal for the elderly to be depressed
- Risk of suicide for the elderly is great (especially in Caucasian men)
- Depression in the elderly is very much treatable

Causes of depression:

- Neurochemical changes in the brain
- Hereditary factors
- Diminished reserve in the elderly
- Response to medical illness
- Side effect of medication

Alcohol abuse symptoms:

- Change in appetite

- Lessened activity, interest and/or energy
- Repeating things over and over, out of guilt
- Frequent thoughts of death

(Information from an all-day conference on depression in the elderly sponsored by the Pacific Islands Geriatric Center and Mental Health Promotion for the Elderly Project, UH School of Public Health)

Miscellany

The panda was restless in his bamboo forest and ambled down to a human village . . . A prostitute befriended him . . . "Come with me, I promise you dinner and a nice time . . ." The lonely panda accepted the invitation . . . After a sumptuous meal, he had a nice time with her . . . It grew late and it was time to return to the hills . . . The woman asked for money. She explained, "The dicitonary says a prostitute exchanges sex for money . . ." "But I'm a panda," he protested. "If you look up panda in your dictionary, I'm supposed to *eat shoots* and *leaves* . . ." With this, he ambled on home . . . (As told by K.Y. Lum)

☆ ☆ ☆

What is the definition of a stockbroker?
One who invests your money over the years till it's all gone. (As told by Rowlin Lichter)

Letters to the Editor

Real Reforms

Mark Dillen Stitham writes: "It astounds me that in a state that is so dominated by Democrats and thus allegedly for the 'little guy' we still have an incredibly regressive excise tax. With half a billon dollars in surplus, how can we continue, in good conscience, to tax food and medical services? Exemption of prescription drugs from taxation did not go far enough . . . Come on legislators, let's have some real reform, not a piddling tax credit . . ."

Our Justice System

Fred Dodge writes from Waianae: "There is something terribly wrong with our justice system." Fred says that Oliver North, who *waged an illegal war* (which he covered up by lying to Congress) causing the deaths of innocent civilians and who sold weapons to a country unfriendly to the U.S., was given a suspended sentence, community service, and a fine . . .

►

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Jim Albertini, accused of *waging peace* by the symbolic action of jumping into a harbor when a ship arrived, which may have been carrying nuclear weapons, was sentenced to a three-year term in prison . . .

Shoot a Psychiatrist?

Hilo psychiatrist Samuel J. Paltin reacted to the *Hawaii Tribune Herald* cartoon caption: "Why is it that every time a kid attacks someone, I want to shoot a psychiatrist?" "First, I hate to see such brutal ideas promoted in our overly violent society. Second, as a psychiatrist, I am aware that several psychiatrists are shot by irate patients each year . . . Working with irrational people, psychiatrists are in a hazardous occupation . . . Please do not plant a seed proposing open season for shooting them . . . Third, psychiatrists are not the cause of the violent behavior of some of our youth . . ."

Miscellany

(Tennis pro, Clay Benham's repertoire)

A golfer stranded on a tiny island for over two weeks was overjoyed to see his rescuer, a voluptuous woman in a diving suit. "I know you crave a smoke," she said, as she pulled out a pack from her suit . . . When he finished his cigarette, she again reached into her suit and pulled out a pint and offered him a drink . . . As he gulped down his drink, she suggested in a sultry voice: "Bet you'd like to play around" and reached for her zipper . . . He was in 7th heaven and his eyes popped out of their sockets as he exclaimed in wonderment: "Don't tell me you also have a golf set in your dive suit!"

☆ ☆ ☆

Alfred and Manuel were sunning themselves on a sandy beach when a sea gull flew over and dropped a bomb on Alfred's face . . . "Quick," he sputtered, "get me some toilet tissue!" Manuel replied, "It's no use . . . the bird is gone . . ."

Physicians Speak Up

Unfair Competition?

Blase Harris, chairman of the Libertarian Party, was critical of the Cayetano-Waihee child-care plan wherein the state would offer a $1-a-day or free after-school care. Blase felt the plan would destroy the burgeoning child-care program in the private sector through unfair competition by a government program . . . "Is it fair to make persons without children, including the elderly, pay for parents who send their children to government child care? . . . If Cayetano and Waihee really want to help responsible parents raise children, they should decrease taxes . . ."

Freedom on AIDS Drugs

Some Hawaii doctors treating AIDS patients are frustrated because state bureaucrats are delaying their efforts . . . State Health Director John Lewin maintains prevention and education "is the main thrust of our effort." But the physicians feel that the State Department of Human Services officials are overriding their medical decisions and that the Advisory Medicaid Formulary Committee is not following John Lewin's intent . . . The U.S. Public Health Service wants aerosol pentamidine for preventing pneumocystis carinii even for healthy HIV-positive persons (with a low white count) . . . AZT is given only to AIDS patients, but authorities say it should be routinely administered for prevention to 1 million HIV-infected persons . . . David McEwan, former president of Life Foundation, feels that it is too time-consuming to require medical approval for administering AZT . . . Wayne McKinney, a formulary committee member, also agrees . . . But some committee members believe State approval is required because the drugs will be used on people in the high-risk category, i.e., homosexuals and i.v. drug users . . . McEwan says the 20 doctors who treat Hawaii's 150 to 200 active AIDS cases are "up to their asses in alligators. . ." Wayne agrees: "A pain in the butt. . ." Cyril Goshima also feels that it would be easier if the doctors could decide without State approval. "I think officials are concerned about expenses. They want some control over the use of the drug. They don't want to give medications that they feel are experimental . . ." Aerosol pentamidine costs about $180/mo. John Sheedy, Medicaid consultant, says he clears all drug requests within a day . . . Requiring approval for such new expensive drugs is not without reason and Medicaid requires all states to exercise control. . ." James Lumeng, chairman of the Governor's Committee on AIDS, says prior approval isn't necessarily bad, as it might encourage a doctor to use a cheaper alternative drug . . . But there are no alternatives to the drugs used for AIDS patients, so doctors should decide what to use. . .

Miscellany

(As told by John Howett, our Dista rep.)

"What's the toughest thing to find in China these days?"

Ans: "Student loans."

☆ ☆ ☆

Three prisoners, a Frenchman, a Japanese and a Portuguese, sentenced to die for their crimes, were granted a choice of how to die . . . The Frenchman: "I'm a Frenchman . . . Let a Frenchman die by the guillotine . . ." He was granted his wish . . . "The Japanese: "Harakiri is the samurai tradition . . ." He was offered a Japanese sword and he disemboweled himself . . . The Portuguese: "Let me die of AIDS . . ." The prison officials were dumbfounded and tried to dissuade him from such a slow, agonizing death, but he insisted . . . The executioner clad in mask, gown and rubber gloves slowly injected a vial of AIDS virus into his veins . . . All the while the prisoner laughed and laughed: "I fooled all of you . . . I can't get AIDS . . . I'm wearing a condom . . ."

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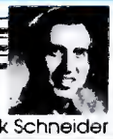
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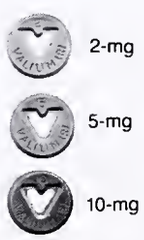
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Special issue

The JOURNAL is pleased to bring out another "Special Issue" — this time on a "hot" and current subject that is affecting our entire community.

The issue editor, Kalani Brady, has hustled mightily in extracting the wisdom of local and national experts in order to assemble a brief but readable set of treatises on the "street" drugs.

We ourselves, in the course of editing, have learned a lot about street drugs, and particularly, the jargon that is so specific to the issue. Who but a narc trafficker, a drug lord, a dealer, a pusher, a free baser, etc., would know that a "body packer" is *not* a four-legged mule, but a miserable Peruvian peon, e.g., who, to avoid the "narcs," carries coke in condoms, swallowed and filling his belly as he hikes the Andean trails into Colombia? The term is also applied to a pretty, young tourist getting off a plane at Honolulu International Airport, her belly similarly laden, with an innocent smile on her face as she approaches the Customs Officer. She also is a "mule"!

J.I. Frederick Reppun, MD
Editor

Substance abuse

I deal drugs for a living. So, I imagine, do most of you! We have had extensive training in the diagnosis and treatment of disease, and frequently the latter involves using pharmacologic agents, be they antibiotics or anti-inflammatories, anti-hypertensives or sulfonylureas. We continue to study the actions and side effects of these medications, as well as drug interactions, so that we may provide our patients with the best possible medical care. We have numerous resources through journal articles, drug handbooks, texts like the Physicians' Desk Reference and other literature. We have available extensive information about the characteristics of each medication.

However, many of us are relatively ignorant of the status of illicit substances in our society: Their epidemiology, the presenting signs and symptoms of use and of overdose, and the opportunities for intervention and detoxification. Consequently, one of the main themes for this year's Hawaii Medical Association 133rd Annual Scientific Meeting on Maui is substance abuse. This month's issue of the Hawaii Medical Journal is taking advantage of our expert speakers by printing articles they have prepared simultaneously with their lectures.

Although organized medicine has long taken a stand against the use of tobacco, perhaps we have underestimated the difficulty in discontinuing smoking. Dr. John Slade, a national expert on nicotine addiction, has prepared a review of the same.

Major Frank Su'a, a former Chief of the Vice Division of the Honolulu Police Department, addresses the magnitude of the drug problem in Hawaii.

As you know, two relative newcomers to the Hawaii market are becoming increasingly important, both because of their extremely high addiction potential and their serious medical complications. Their purchase price also makes them easily obtainable by all segments of our society. These are free base and crack cocaine, and crystal methamphetamine, commonly called ice. Two articles address cocaine. Dr. Stephen Wallach, one of our fine cardiologists, will review the medical complications of cocaine use. Dr. Russell Hicks, a specialist in both internal medicine and psychiatry, presents an overview of the cocaine problem as well as its therapy. As you may know, Dr. Hicks has been one of the state's major counselors for substance-abuse patients, and is returning to Hawaii after a year of intense study while directing an inpatient substance-abuse center in Los Angeles.

Dr. Tom Nestor, also an internist, discusses a case of pulmonary edema associated with the use of crystal methamphetamine.

Finally, Dr. Hicks addresses pain management in the chemically dependent patient, a topic about which we all need to learn more!

I truly hope the reader is able to attend the Scientific Sessions of the Association's Annual Meeting on Maui! I am sure we will profit from the presentations and the dialogue that follows. However, if you are unable to attend, may this issue educate us all about a serious growing problem in our community!

S. Kalani Brady, MD, MPH
Special Issue Editor

The war on drugs

The dilemma is a national one as well as a local one. It is a "war" more difficult to win than was the United States' undeclared war in Vietnam against the allegedly non-descript irregulars of the Viet Cong. It is a war against two powerful adversaries at the same time: The forces of supply and the equally inexorable forces of demand. Both are fueled by maxi-dollars, and the new federal "Drug Czar," William Bennett, formerly Secretary of Education in the Reagan administration, is far from optimistic that he can have an impact on street drug

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use, even after a preliminary study period of six months and even after a generous funding by Congress.

In Hawaii we have as experienced a law-enforcement officer knowledgeable about drugs as there is anywhere: Major Frank Su'a of the Honolulu Police Department. The JOURNAL is fortunate to have Major Su'a submit his views in an article in this issue titled "Street Drugs: Everyone's Business."

Major Su'a makes a strong pitch for involvement by the general public. We agree that to condone the growing of marijuana in one's neighbor's backyard is bad. However, to become an informer on one's neighbor is not the American way. The power of the state under Stalin was totally dependent upon the "informer system" in the Soviet Union; people had to speak in whispers, if they dared to speak at all against the overlords. We do not want that system here.

We in Hawaii have also experienced, sadly, the tyranny of pot growers who have used guns and pit-bull dogs as "enforcers," even against innocent and unsuspecting local hikers and exploring visitors. It can be very dangerous, Major Su'a, as you no doubt well know.

There is much controversy over how to tackle the problem of street drug use. The Major's approach has been an exemplary one, one of education in the schools. He sounds optimistic and enthusiastic as he urges a greater effort supported by adequate funding; the favorable results of this approach cannot be evaluated in the short term, unfortunately.

There are some who favor decriminalizing the use of "pot," claiming that its use does not lead to the use of hard drugs. This is highly controversial. Major Su'a obviously feels that marijuana destroys brain cells and has a permanent destructive effect. That too is being argued pro and con.

Former State Attorney General Michael A. Lilly, in a letter to the editor (The Honolulu Advertiser, 3/13/89), decries the failure of the federal U.S. Postal Service to "prohibit the discovery and confiscation of drugs in the mails" . . . which have become "the major conduit for marijuana leaving Hawaii." Are we helpless on that score?

Does anyone have an answer that will work in interdicting the demand and supply? Physicians are overwhelmed by the need to treat the victims, treatment that is largely unsuccessful. Physicians don't even know how to prevent this epidemic.

Surely the outlook for a bright future in this world gone mad in a competitive marketplace, wherein morals count for naught and where mad men with itchy fingers have the power to blow us all to smithereens by fusion and fission; surely the outlook facing future generations is not that bad!

J.I. Frederick Reppun, MD
Editor

Children

The whole country is alert to the need for improved education and upbringing of the nation's children. This hardly needs to be said except that we as physicians have a part to play in it.

School health, as a separate entity, has been and continues to be a concern of the Hawaii Medical Association. Our own Cal Sia has accomplished a lot in terms of alerting the profession, and our community, to the importance of each child having a "medical home" (see several articles by Cal in past issues of the *Journal).*

Ed Margulies, MD, at the School Health Services Branch of the State Department of Health has alerted us to an upcoming conference on this matter. It is to take place December 8, 9 and 10 at the Ramada Renaissance Ala Moana Hotel in Honolulu. It is called "**Children in a World at Risk,**" sponsored by the Elementary School Center at its Second Annual Conference for "Educators, Health-care Professionals, Parents, Social Workers and all other Advocates for Children."

Melvin D. Levine, MD, Director of the Clinical Center for the Study of Development and Learning and Professor of Pediatrics at the University of North Carolina at Chapel Hill, will be the featured speaker.

Those of our readers who are particularly interested in attending and participating are encouraged to contact Norman Cox at Punahou School 944-5818 for details.

The subject is an important one for the current generation of parents, with implications for the future generations as well.

J.I. Frederick Reppun, MD
Editor



Street drugs: Everyone's business

Major Frank Su'a*

In the profession of law enforcement, we see drug abuse as our most serious crime problem. We also realize that simply making arrests, by itself, won't solve the problem. The drug business might be the filthiest business on earth, but it's not a business that forces customers to buy dope. Dope dealers may be ruthless and may even kill, but no one forces anyone to buy drugs at gunpoint. The truth is that drug dealers would go nowhere, were it not for the customers.

I've been directly involved in this war against drugs for many years and although I've seen firsthand the countless tragedies among different families, acquaintances and friends, it amazes me that most people don't believe that fighting drugs has anything to do with themselves.

In my job, I've had many opportunities to talk to both parents and teachers about the problems in our schools, and I'm always surprised about the lack of knowledge about drugs and their effects. One thing that crushes me most about this problem is when I see young people involved with drugs.

Involved with law enforcement, we've always suspected that a serious problem of drug use existed in our schools; I'm referring to both public and private schools. Thanks to an effort by the State Department of Education and its survey of our schools, we now know about the serious impact drugs have on our school-aged youth.

I've had many opportunities to talk to recovering addicts in the past. They were of various ages and professions. They all agreed that we need an ongoing curriculum to address illegal drug use in our school system, and the first-grade level would not be too soon as a starting point. If what they were telling us is true, it appears that the Drug Awareness Resistance Education (DARE) program, which currently targets fifth-graders in our public and private schools, is a positive step in the right direction. DARE focuses on peer-resistance training, self-concept improvement, and value decisions concerning respect for the law and for personal safety. DARE is a sound investment when we realize that the future of our community rests on the ability of our children to cope with the responsibilities and stresses they inherit.

This is only one approach to *prevention education;* we need to do more. We need an aggressive, school-based drug-education and prevention program in every classroom.

If someone were to ask me what drug I considered to be the most dangerous, my answer would be marijuana. People like to think that this drug is harmless. The truth is that research has proved that marijuana destroys brain cells and reproductive systems. It's the most dangerous drug around because damaged cells can't be repaired and their functions are lost forever. What we are seeing is our young people who are involved with marijuana never being able to reach their full potential. The drug is very subtle in its effects. We see bright students who turn into average students, and we see the average student go on to failing.

The cocaine problem has become very visible because of the national coverage in the news media. Just look at the recent scandals involving professional athletes! Well-known people from all walks of life have overdosed or ruined their lives because of cocaine.

In spite of all this and the high rate of overdose deaths in Honolulu, there are still people in the community who believe that cocaine is a safe recreational drug that is not addicting. The truth is, cocaine creates physiological cravings as powerful as or even greater than the physical demands of heroin . . . and yes, it kills. In Honolulu, the community witnessed 26 fatal overdose cases over a 15-month period; 23 of these cases involved cocaine.

The third most menacing drug, which is fast becoming the drug of choice and competing with cocaine, is "crystal meth," which is also referred to as "ice." This form of methamphetamine comes in a crystalline form and is normally smoked with the use of a glass pipe. It's a stimulant that is highly addictive and dangerous. Many of the violent incidents reported in our community are tied in to the use of this drug. Use of crystal meth began about eight years ago in Hawaii; however, during the past two years, it has reached epidemic proportions. One-tenth of a gram sells for $50 on our streets today, yet the escalation of crystal meth continues.

It's time to let everyone know that they have a personal and moral responsibility to find drug use unacceptable anywhere, anytime and by anyone. If this were the prevailing attitude in our community, we could have a "drug-free Hawaii" in our schools, workplaces and in our social activities.

Today, people grow "pot" in their backyards, and the neighbor says: "As long as he doesn't bother me, I couldn't care less." Well, those who don't take an active, hostile position against drugs are giving their tacit approval to their cultivation and use. The drug problem in Hawaii — and everywhere, as a matter of fact — didn't just suddenly appear on the scene. It's been building for years. It isn't a simple, one-sided problem; it's multi-faceted and goes off in all directions.

Finding the right answers to bring it under control

(Continued on page 454) ►

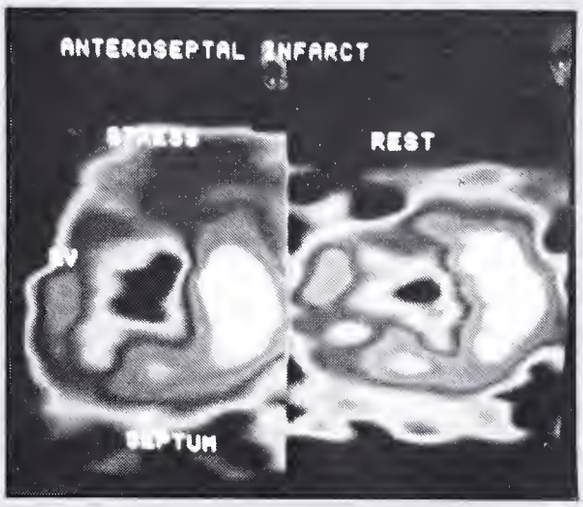
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Honolulu Police Department

Nuclear Medicine Teaching File

TOMOGRAPHIC THALLIUM STRESS TESTING



1. Normal Myocardial Perfusion
(Note complete doughnut appearance.)



2. Anteroseptal Infarct
(Note loss of complete doughnut appearance both after stress and rest.)



3. Lateral Wall Ischemia - Stress
(Note loss of lateral wall blood flow.)



4. Lateral Wall Ischemia - Rest
(Note normal appearing lateral wall after rest.)

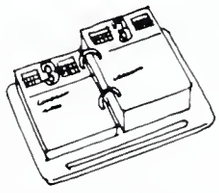
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won't be done quickly either. We have a long, hard fight ahead and we need the active support and involvement of the entire community. It's not just a police problem; it's our problem; it's a community problem. Drug abuse undermines our economy, social values, and most of all, it attacks our most unique and irreplaceable asset: our children.

We must have the will to win; that means we have to get serious; that means we have to be committed in every possible way. If we won't fight — if we let the other guy do it — then we'll surely lose. We can begin to turn things around and win this war only if we work together and fight for a "drug-free Hawaii." ■



Continuing Medical Education

CALENDAR OF ACCREDITED EVENTS—CATEGORY 1

Accredited Programs of CME allow one unit of AMA credit for each hour of instruction excluding all "breaks." Some programs also are accredited for AAFP prescribed credit.

LOCAL ACCREDITED PROGRAMS

ONGOING

For a complete list of ongoing programs, please refer to the September 1989 edition of the HAWAII MEDICAL JOURNAL. Further information is available through the individual institutions or through the HMA's CME Department.

SPECIAL EVENTS

All special events should be confirmed with the CME program sponsors, as cancellations are not necessarily reported to the HAWAII MEDICAL JOURNAL.

NOVEMBER

11/30-12/01

Fetal Surveillance. Contact: Queen's Medical Center OB-GYN Hui, c/o Robb Ohtani, MD, 1380 Lusitana St., #404, Honolulu, HI 96813. Location: Kahala Hilton Hotel, Honolulu.

DECEMBER

12/02-12/09

4th Annual Critical Issues in Urology: Prostate, Bladder, Testis and Kidney Cancer. Contact: Symposia Medicus, 2815 Mitchell Dr., Suite 128, Walnut Creek, CA 94598-1622; 415-935-7889. Location: Stouffer Wailea Beach Resort, Maui.

12/09-12/10

Travel Medicine '89. Contact: Linda Limauro, American Society of Tropical Medicine and Hygiene, 20 York St., New Haven, CT 06504; 203-785-2476. Location: Honolulu.

12/09-12/16

OB/GYN of the 90's: New Instrumentation and Technology. Contact: Symposia Medicus, 2815 Mitchell Dr., Suite 128, Walnut Creek, CA 94598-1622; 415-935-7889. Location: Stouffer Wailea Beach Resort, Maui.

12/24-12/30

Advances in Medicine '89. Symposia Maui, Inc. and co-sponsored by the Hawaii Medical Association. Contact: Paula Harrison, Symposia Maui Inc., P.O. Box 833, Makawao, Maui, 96768, 808-878-6757. Location: Royal Lahaina Resort, Maui.

1990

JANUARY

1/02-1/06

Obstetrics, Gynecology, Perinatal Medicine and the Law expanded to include **Emergency Medicine, Anesthesiology and Surgery.** Contact: American Society of Law & Medicine, 765 Commonwealth Ave., Boston, MA 02215. Location: Hyatt Regency Waikoloa, The Big Island of Hawaii.

1/10-1/14

Trans-Pacific Allergy & Immunology Society Annual Meeting. Contact: American Academy of Allergy & Immunology, 611 E. Wells St., Milwaukee, WI 53202. Location: Kona, Big Island of Hawaii.

1/14-1/19

Hawaiian Seminar on Clinical Anesthesia. Contact: CSA, 1065 E. Hillsdale Blvd., Ste. 410, Foster City, CA 94404, 415-345-3020. Location: Sheraton Kauai, Poipu Beach, Kauai.

1/14-1/20

The Hospital Medical Staff & Trustee Conference. Contact: Estes Park Inst. Box 400, Englewood, CO 80151; 800-223-4430. Location: Kona, The Big Island of Hawaii.

1/20-1/27

Update: Controversies in Emergency & Primary Care. Contact: Edith S. Bookstein, American Institute of Postgraduate Education, P.O. Box 2586, La Jolla, CA 92038, 619-454-3212. Location: Kona Surf Resort, Big Island of Hawaii.

The Hawaii Medical Association does not review or evaluate the programs listed in the Hawaii Medical Journal Continuing Medical Education column and assumes no responsibility for educational value, scientific content, changes in agenda or cancellation.

(Continued on page 460) ►

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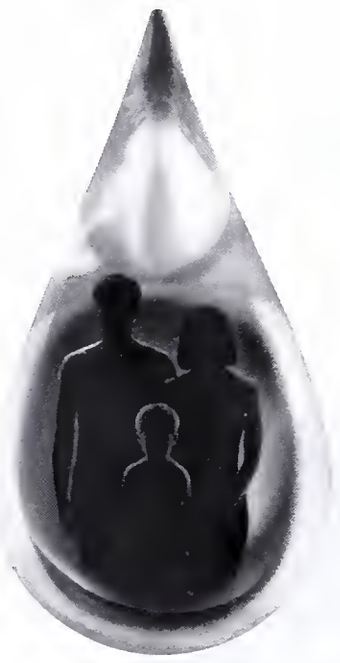
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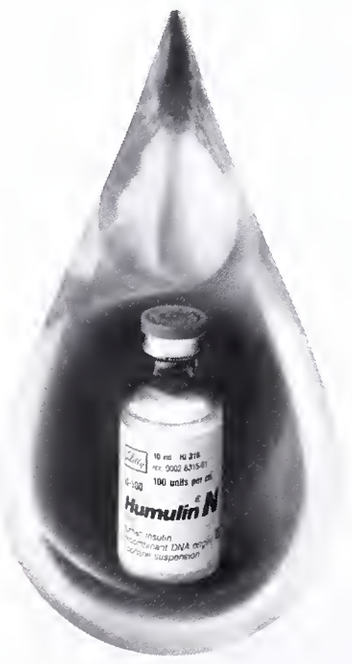
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Crystal methamphetamine-induced acute pulmonary edema: A case report

Principal Author: Thomas A. Nestor, MD*
Warren I. Tamamoto, MD**
Tiong H. Kam, MD†
Terry Schultz, MD††

"Crystal methamphetamine" is a crystalline form of amphetamine, the abuse of which is growing rapidly in popularity in Japan, Hawaii and the West Coast[1]. Drug experts and law enforcement officials say that the use of crystal meth is spreading east from California. It may produce permanent addiction and can produce violent schizophrenic behavior. Introduced along the Leeward Coast of Hawaii about 3 years ago, it is now being used throughout Oahu and is starting to rival cocaine as the *illicit drug of choice in Hawaii. It is also the major drug problem in Japan, where the powder form is called "shabu." The smoking of crystal ("ice") in a glass pipe is more common in Hawaii, whereas other routes of administration, such as snorting or intravenous use, are more common on the West Coast. We present the case of a young woman who was admitted to Kaiser Moanalua Medical Center with near fatal acute pulmonary edema consequent to the use of crystal meth.*

Case Report

A 28-year-old Caucasian woman was seen in the Emergency Room with a 3-week history of lethargy, nonproductive cough and nausea. The patient had apparently felt well enough that day to go to work, but after returning home from work, vomited twice, prompting her to seek attention in the Emergency Room.

The patient admitted to chronic marijuana use and occasional use of alcohol. She also admitted to smoking crystal meth, most recently the night prior to admission. She denied intravenous drug use. Past medical history was significant only for a recent evaluation by the Neurology Service for a complaint of numbness and weakness of her legs and a presumptive diagnosis of multiple sclerosis.

Physical examination was remarkable for the presence of mild, bibasilar, crepitant rales. Cardiac examination was completely within normal limits.

Laboratory studies revealed the following: A WBC of 21,500 with 39% segs and 4% bands. Electrolytes were remarkable for a potassium of 2.8 and a bicarbonate of 13; the anion gap was 19 meq/dl. Other laboratory abnormalities included hyperglycemia and hematuria. Chest roentgenogram revealed bilateral diffuse interstitial/alveolar infiltrates with a normal heart size (Fig. 1). Sputum gram-stain indicated normal oral flora.

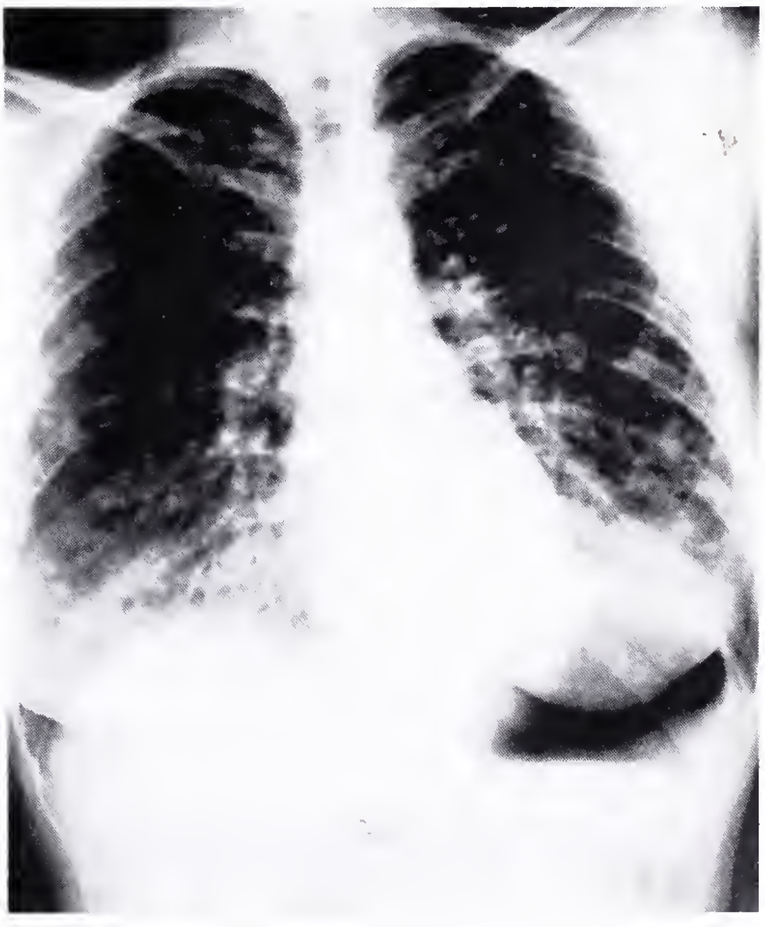


Figure 1: On admission to floor.

* Internist, Kaiser Medical Center
Honolulu, Hawaii
**Pulmonologist, Kaiser Medical Center
Honolulu, Hawaii
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Chair of State of Hawaii American Medical Society for Alcoholism and Other Drug Dependence

The patient was admitted to the floor and placed on cefuroxime, 750 mg i.v. every 8 hours. She was placed on 2 liters of oxygen by nasal cannula; an arterial blood gas was reported with a pH of 7.29, $Pa0_2$ of 113 mmHg and $PaC0_2$ of 33 mmHg while on the oxygen.

During the night of admission, the patient developed increasing dyspnea, tachypnea and hypotension; she was transferred to the Critical Care Unit (CCU) for management.

The patient arrived in the CCU with a blood pressure of 63/50 mmHg and in moderate respiratory distress with a respiratory rate of 45/min and marked skin pallor. She was intubated and placed on mechanical ventilation. A catheter was placed in the right femoral artery, and one also in the pulmonary artery via the left subclavian vein.

The mechanical ventilation supplied $Fi0_2$ of 100% with a tidal volume of 800 cc and a ventilator rate of 12/min. Arterial blood gas at this point revealed a pH of 7.36, $Pa0_2$ of 100 mmHg, and $PaC0_2$ of 34 mmHg. The pulmonary artery catheter revealed a pulmonary artery pressure of 23/18 mmHg, with a pulmonary artery occlusion pressure of 8-10 mmHg. Cardiac output was 2.74 L/min and cardiac index was 1.68 L/M^2, with a calculated systemic vascular resistance of approximately 1634 dynes x seconds over cm^5.

The WBC went up to 41,400 with 51% segs and 41% bands. Sedimentation rate was 0 mm/hr Westergren. Lactic acid was 7.8 Serum sodium was 140 mEq/L, potassium 3.9, chloride 111, and total $C0_2$ 18. Serum and urine toxicology screens were obtained. A repeat chest roentgenogram revealed worsening bilateral alveolar pulmonary infiltrates consistent with pulmonary edema (Fig. 2). The patient was stabilized on the ventilator with a rate of 10/min, tidal volume of 800 cc, $Fi0_2$ of 40% and PEEP of 5 cm H_20.

The patient's hypotension responded to saline and dopamine infusion. Erythromycin 500 mg i.v. every 6 hours and trimethoprim-sulfa 240 mg i.v. every 6 hours were added to the cefuroxime. Thoracic surgical consulation was obtained with the intent of obtaining an open lung biopsy. Overnight, however, the patient's gas exchange rapidly improved.

By the following morning, $Fi0_2$ had decreased to 0.30, with a PEEP of 2.5 cm H_20. An ABG revealed a pH of 7.4, $Pa0_2$ of 92 mmHg and $PaC0_2$ of 38 mmHg. A repeat chest X-ray showed significant clearing of the pulmonary edema pattern (Fig. 3). The patient was then extubated and placed on oxygen at $Fi0_2$ of 0.30 by ventimask. Chest X-rays continued to show clearing and became normal by the 2nd hospital day (Fig. 4).

Serial CPKs had been obtained, indicating a peak CK of 290 units/liter with an MB fraction of 12.6%. Electrocardiograms on the 1st and 2nd hospital days revealed small Q waves in V_1 to V_3 and nonspecific ST-T wave abnormalities. When repeated on day 3, it was within normal limits. Two-dimensional echocardiograms performed on the same day showed global hypokinesis with a dilated LV compatible with a dilated cardiomyopathy.

Antibiotics were discontinued after 3 days; there had been no evidence of infection on multiple cultures. The patient was discharged from the hospital on the 5th day.

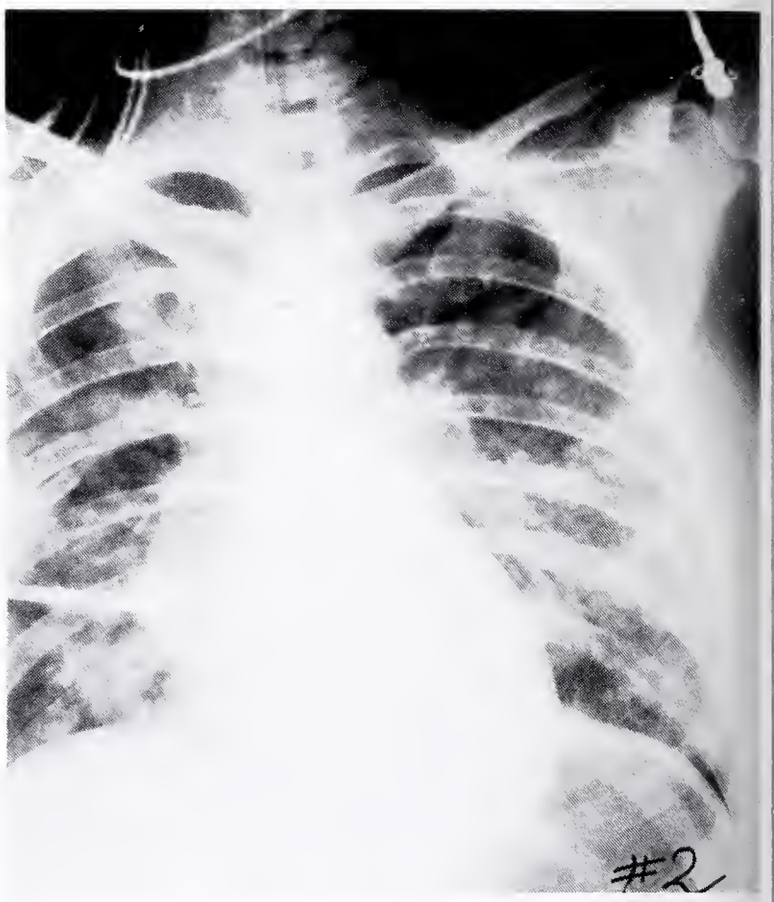


Figure 2: At transfer to CCU.

Subsequently, tests for HIV antibody, Legionella DFA smear and culture, antiglomerular basement-membrane antibody, cold agglutinin and sputum stains for Pneumocystis carinii were all negative, as were ANA, C3 and C4 complement and Rheumatoid factor. The toxicology screen was positive for amphetamines and tetrahydrocannabinol. Repeat echocardiogram performed 14 days later, after full recovery, showed complete resolution of left ventricular wall abnormality. A thallium treadmill stress test done subsequently showed normal perfusion.

Discussion

This 28-year-old female drug abuser developed acute pulmonary edema 24 to 36 hours following use of crystal meth by the inhalation route. Multiple other metabolic abnormalities were noted on admission. No infectious causes could be identified in spite of an extensive battery of studies. Pulmonary artery and pulmonary artery occlusion pressures were normal, consistent with the diagnosis of pulmonary edema of noncardiogenic origin.

In spite of the data, however, it was difficult to be certain whether this patient's pulmonary edema could have been of a cardiac rather than a noncardiac origin. Clinical and radiographic improvement, however, was extremely rapid. This suggests only a transient capillary leak, such as could be expected in transient left ventricular failure. The elevated CK-MB band in the face of a normal thallium TST may have been related to prolonged and profound hypotension and hypoxemia during the acute phase of the patient's illness.

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Global hypokinesis, as seen on the initial echocardiogram, may have resulted, and may have played an important role in this patient's illness. The term "stunned myocardium"[1-6] has been applied to reversible myocardial dysfunction due to ischemia. This term might have been applicable in this case if pulmonary artery catheterization was performed too late. Pulmonary artery catheterization, however, was performed within 3 hours of arrival in the CCU and did not reveal elevated pulmonary artery pressure or pulmonary artery occlusion pressure. Pulmonary edema due to other types of drug abuse, for example narcotic overdose, is not considered to be due to elevated pulmonary artery occlusion pressures. Thus, a primary effect of the drug on pulmonary capillary permeability cannot be excluded.

This case is significant because pulmonary complications of methamphetamine use have not been previously reported. The use of crystal meth seems to be spreading eastward across the United States, and if such abuse by the inhalation route becomes more prevalent, crystal meth-induced pulmonary edema may be seen more frequently. ■



Figure 3: Twenty-four hours after admission to CCU.

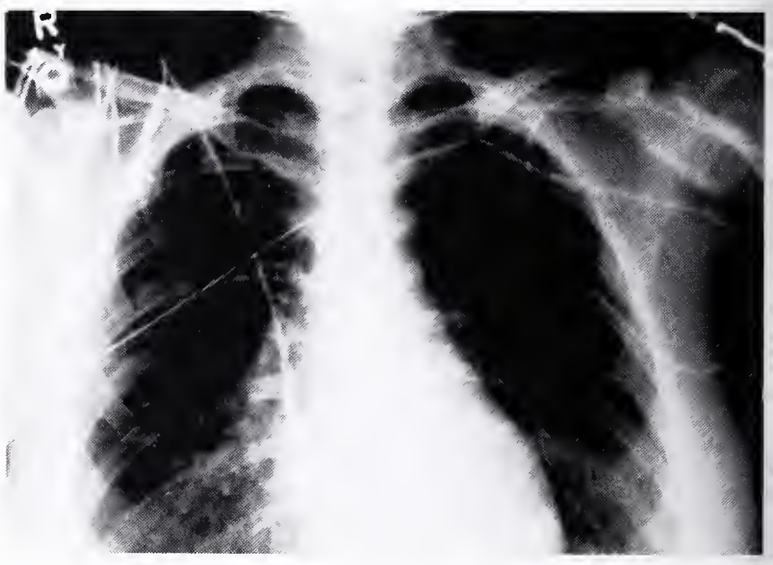


Figure 4: Forty-eight hours after admission to CCU.

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2. Anderson JL et al: A randomized trial of intracoronary streptokinase in the treatment of acute myocardial infarction. *N Eng J Med,* 308:1313, 1983.
3. Stack RS et al: Functional improvements of jeopardized myocardium following intracoronary streptokinase infusion in acute myocardial infarction. *J Clin Invest,* 72:84, 1983.
4. Reduto LA et al: Coronary artery reperfusion in acute myocardial infarction: beneficial effects of intracoronary streptokinase on left ventricular celvage and performance. *Am Heart J,* 102:1168, 1981.
5. Braunwald E, Kloner RA: The stunned myocardium: prolonged, postischemic ventricular disfunction. *Circulation,* 66:1146, 1982.
6. Przyklenk K et al: Diastolic abnormalities of postischemic "stunned" myocardium. *Am J Card,* 60:1211, 1987.

CONTINUING MEDICAL EDUCATION *(Continued from page 454)*

1/21-1/25
Family Practice: Caring and Curing. Kauai Fund for Continuing Education, co-sponsored by Hawaii Medical Association. Contact: David Elpern, MD, 3420-B Kuhio Hwy., Lihue, HI 96766; 808-245-1173. Location: Poipu Beach, Kauai.

1/22-1/26
8th Annual Hawaii Conference on Gastrointestinal and Hepatic Diseases. The Honolulu Medical Group Research & Education Foundation and co-sponsored by the Hawaii Medical Association. Contact: Gary Glober, MD, 1380 Lusitana St., Suite 701, Honolulu, HI 96813, 808-536-1021. Location: Hyatt Waikoloa, Big Island of Hawaii.

1/26-1/28
Practical Considerations in Pain Management, Academy for Continuing Education of Kauai and co-sponsored by the Hawaii Medical Association. Contact: John B. Oillon, MD, P.O. Box 759, Koloa, HI 96756; 808-742-6750.

1/30-2/03
16th Annual Mid-Pacific Radiological Conference. Contact: LARS, P.O. Box 91215, Los Angeles 90009-1215; 213-827-9078. Location: Maui Marriott Hotel, Maui.

FEBRUARY

2/12-2/16
Neurology in Clinical Practice. Contact: Mayo Clinic/Mayo Foundation, 200 First St., SW, Rochester, MN 55905; Dr. Mitchell 507-284-2509. Location: Kauai.

2/18-2/23
9th Annual Masters Radiology Conference. Contact: Mary Charles & Assoc., 2334 S. King St., Ste. 205, Honolulu, HI 96726, 808-942-9655; FAX 808-949-1273. Location: Hyatt Regency Waikoloa, Big Island of Hawaii.

2/19-2/23
Hawaii 1990: 5th Annual Advances in Primary Care Medicine. Pacific Institute of Continuing Medical Education and co-sponsored by the Hawaii Medical Association. Contact: Valerie Murray, P.O. Box 1059, Koloa, HI 969756, 808-742-7471. Location: Stouffer Waiohai, Kauai.

Medical complications of the use of cocaine

Stephen J. Wallach, MD*

There are many serious medical problems that are associated with the use of cocaine and "crack" cocaine.

One must understand the pharmacology of cocaine. It derives as an alkaloid — a nitrogenous alkali ($C_{17}H_{21}NO_4$ — from the leaves of the coca plant *Erythroxylum coca,* of which there are 230 varieties, but only 4 produce enough of the alkaloid to make extraction worthwhile. The leaves, stripped from the plants (harvested only 3 or 4 times a year) are steeped for several days in dilute sulfuric or hydrochloric acid, then treated with limewater and many other chemicals. The strained, resultant reddish-brown fluid is treated with ammonia, which produces a paste of ivory-colored granules. This is "cocaine base," an alkaline residue full of impurities. Further purification in "laboratories" results in a white or cream-colored crystalline powder. "Free base" is pure cocaine HCl dissolved in water to which ammonia or baking soda is added and then acetone or ether; this is heated and the resultant residue smoked through a water pipe. "Crack" cocaine is made by heating a solution of cocaine HCl in a pan with baking soda added until a solid "rock" is formed. Sometimes this is adulterated by adding amphetamines or lidocaine. Pieces of the rock are "smoked" directly through certain paraphernalia and have an immediate effect or "high" initially, but with repeated use the euphoria is less and the deleterious effects become preponderant.

Free base and crack are absorbed very rapidly on contact with all mucous membranes. The drug is detoxified by the hepatic cholinesterases. It is excreted in the urine and can be present in the body for 24-36 hours. The local anesthetic effect is due to its ability to block the initiation and conduction of electrical impulses within nerve cells by preventing the rapid increase within the cell membrane primarily of sodium ions during depolarization. In the central nervous system, cocaine blocks the pre-synaptic uptake of the neurotransmitters of norepinephrine and dopamine, producing an excess of transmitters at the post-synaptic receptor sites. This causes increased blood pressure, tachycardia and seizures. This excess of sympathetic nervous system materials is responsible for many of the medical problems that are associated with cocaine usage.

Cocaine can generate many problems both in the pregnant woman and in her fetus such as abruptio placentae with hemorrhage, other vaginal bleeding, placental vasospasm, spontaneous abortion and premature delivery; the infant when born may have low birth weight, hypotonia or hypertonia, poor feeding and abnormal sleep patterns.

One of the main routes of ingress of cocaine is through the nose. Nasal stuffiness, chronic rhinitis, hyperemia, atrophy of the nasal mucosa, loss of smell, epistaxes and necrosis all can occur. Some of these effects can be permanent.

Cocaine is often self-administered intravenously, but severe thrombophlebitis and cellulitis can occur. A severe arteritis can develop after an inadvertent intra-arterial injection. Loss of eyebrows may be incidentally related to being burned while free-basing with cocaine dissolved in ether.

Intoxication causes dysphoria, decreased appetite, paranoia, sleep disorders and delirium.

Cardiac disorders have been occurring with increasing frequency and severity. Many cases of myocardial infarction have been reported. Any young person with a Myocardial infarction should be questioned regarding cocaine usage. Fixed coronary artery disease is a great risk because of the effect of predictable increases in cocaine-induced heart rate and blood pressure. Coronary artery spasm and thrombosis both have been demonstrated to occur, even in patients who have coronary arteries without fixed obstruction. There are cases with fixed lesion arteriosclerosis that have developed as a result of cocaine usage. There have been reports of cocaine being used for nasal surgery with consequent myocardial infarctions. Reinfarctions have happened with re-use of the drug. Cardiotoxicity can occur from all routes of administration and is not limited to the doses of the drug being massive. Patchy, necrotic areas in the myocardium, as well as congestive cardiomyopathies have been reported.

Cocaine is an arrythmogenic drug that has either a direct effect or caused by an excess of catecholamines. These arrythmias include sinus tachycardia, premature ventricular contractions, supra-ventricular tachycardias and ventricular fibrillation. A myocardial infarction, of course, may produce arrhythmias. Treatment may include beta-blocking agents, amitriptyline and calcium channel blockers. Other agents do not seem to be effective.

Hypertensive emergencies are common with cocaine abuse, especially after the concommitant use of amphetamines. There have been reports of a ruptured aorta in previously hypertensive patients as a result. Treatment with beta blockers or calcium channel blockers would be the treatment of choice in such instances.

Pulmonary complications may also occur as a result of

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smoking or of free-basing the drug. These include decreased diffusion capacity, parenchymal lung damage, non-cardiogenic pulmonary edema, spontaneous pneumomediastinum, pneumo-peritoneum and mediastinal emphysema.

Hyperpyrexia is of a central nervous system origin and can lead to hyperthermia, rhabdomyolysis myoglobinuria and renal failure. Treatment must include rapid lowering of the temperature, hydration and the administration of mannitol.

Cocaine can cause ischemia of the intestine and resultant gangrene of the bowel. There have been case reports where "body packers or mules" (persons who ingest plastic bags of cocaine for transport and delivery) have had accidental rupture of the plastic bag take place in the gut, which has caused massive acute fatal overdoses of cocaine.

Many ill effects can take place in the central nervous system. Seizures and status epilepticus have occurred. Cocaine lowers the seizure threshold in people with a preexisting seizure disorder. In addition to hyperpylexia, cocaine can produce seizures de novo. Hypertensive cerebritis and crises have been cited. Fungal cerebritis has occurred as the result of intraveneous usage of the drug. Strokes ("coke strokes") develop and are usually thrombotic. There have been many cases reported in which traditional seizure medications are not effective.

From a psychiatric point of view, there occurs euphoria, dysphoria, paranoid psychosis, mania, extreme agitation and depression after a "run" of a large amount of drug, causing the epinepinephrine stores to become depleted.

Other adverse effects have been reported, such as weight loss, glucose intolerance and some sexual dysfunctions.

When cocaine is taken intravenously, HIV infection can be introduced and AIDS develop, as well as subacute bacterial endocarditis, pneumonia, pulmonary embolism, fungal infections and other problems derived from intravenous use of drugs.■

. . . more of the same

Cocaine abuse and its treatment

Russell D. Hicks, MD*

The abuse of cocaine has increased dramatically over the past 15 years. Studies performed by the National Institute of Drug Abuse (NIDA) revealed at least a five-fold increase in its use from the mid-'70s to the late '80s. Recent reports indicated that at least 30 million Americans have tried cocaine and that 17% of high-school seniors have used cocaine on more than one occasion. It is estimated that there are 5,000 new users each day. Prevalence studies show that current use (use within the past 30 days) has increased to include at least 6 million Americans. Whereas studies over the past 2 years suggest some slowing of the dramatic increase mentioned above, the increase in the use of crack cocaine continues unabated. Recent political events in Central and South America are a clear reflection of the expanding demand for cocaine in both North America and Europe.

History

The ancient Peruvians knew of cocaine's ability to alter mood as early as AD 500, when they chewed the dried leaves of the *Erythroxylum coca* plant. Although the invading Spaniards tried to ban the use of cocaine, they soon found it difficult to get the Incas to work without their coca leaves. As a result, the Catholic Church became the largest grower of coca in South America for some time. Since the alkaloid benzoyloxymethylecgonine, the chemical name for cocaine, makes up about 1% to 1.5% of the coca leaf, and much of the potency is lost as the leaves dry, it did not become popular in Europe until the 1860s, when the German chemist Albert Niemann isolated the active ingredient and named it cocaine.

Sigmund Freud used the drug extensively. He felt initially that the pharmacologic research on cocaine was more important than his psychological research. His book "Uber Coca," published in 1884, remained the authoritative treatise on cocaine effects on humans until there was renewed interest in the drug in the 1970s. Freud not only used it himself, but prescribed it for a variety of clinical conditions, including alcoholism, hysteria, digestive disorders and morphine addiction.

In the latter part of the 19th century, cocaine was added to wine and became very popular in Europe. Coca-Cola, the "intellectual and temperance beverage," was essentially coca wine without the alcohol. This soft drink contained cocaine as its active ingredient until 1903, when it was replaced by caffeine, but for many years the decocainized coca leaf was still used to help maintain the unique flavor.

Although an ingredient of many patent medicines in the early 20th century, the Harrison Narcotics Act of 1914 classified cocaine as a narcotic; thus its use in proprietary medicines stopped. The drug was only in limited demand for roughly 40 years until the drug epidemic of the 1960s. It had been expensive, had a short half-life and was difficult to obtain until the demand suddenly increased

(Continued on page 483) ►

*Medical Director
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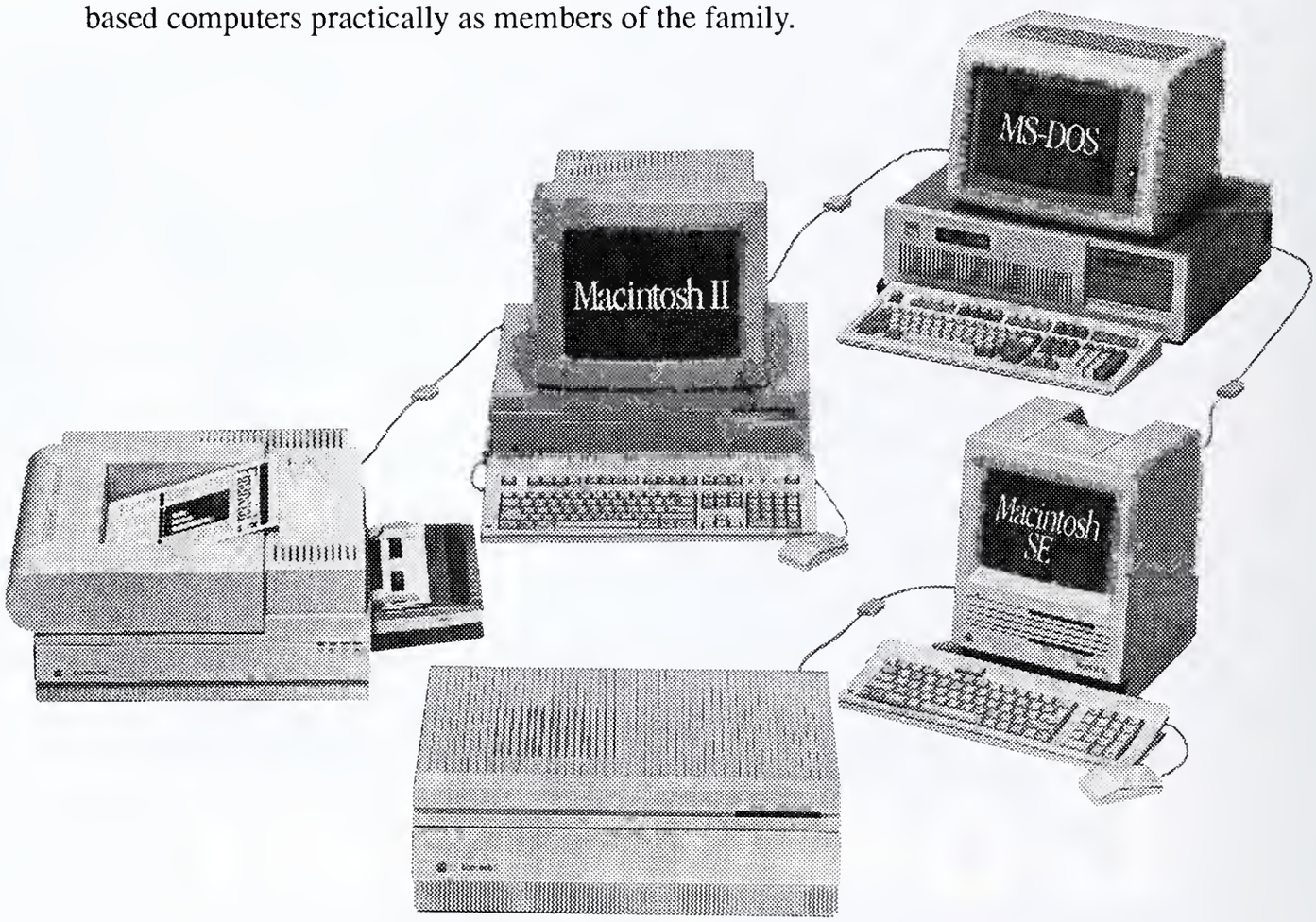
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Authorized Dealer

Automating your Accounting System

By Ron Skates

Bits, bytes, RAM, ROM what do all these mean? If you currently are running a manual bookkeeping system — probably nothing. However, the minute you decide to even explore computerizing, expect to be inundated with computer jargon thrown at you by sales people, consultants, computer hobbyists and, yes even well meaning friends who have read some computer articles.

Frightened and confused yet?

One needn't be if time is spent up front defining your needs and preparing yourself. This up front time will allow you to sleep at night when you make your final decision.

What questions do you ask? Who do you ask? Where do you start?

The first thing you should do is take a hard look at yourself. Are you able to keep your books up to date? Are you able to keep track of money owed to you and the money you owe to others? Do not expect a computer system to teach you bookkeeping, or staighten up a sloppy existing system. Do you have a need for a computer, or is it just a whim? You may take a small annoyance, and create Godzilla!

If you are a construction company are you doing job costing, estimating, certified payroll A.I.A. billing? If you are a retail store how do you want to handle cash sales from registers? Is a point-of-sale system that uses terminals for input (detail invoicing) or a register that communicates with a computer (summary cash sales) needed? Categorize these needs. What do you hope to improve with your new system?

Now you have your questions; where do you look for the answers? Trade journals are usually a good source of information. Computer user groups are supportive environments, and computer bulletin boards can be useful (if you already have a computer and modem). Make sure that when you read articles rating computer software, you analyze them as if they were in your environment.

Before someone even starts to advise you to let them "custom write" a program for you, make sure you have exhausted all the avenues into existing off-the-shelf packages. The majority of the time, there are existing programs out there that will adapt to your needs, if not meet them fully. Watch out for the bargain-basement packages. What you save in money you can possibly pay out in time spent making it work.

Look for someone who will train you in the use of the software. If the person cannot get the answer to your question, run, do not walk, out the door.

Be sure to make notes comparing the various answers you will receive. If you use a consultant make sure you get some detail on his or her experience, *and check it out.*

Focus on the application or software first. Once you have determined that, and not before, look for the computer equipment, and the service and support for that hardware. It will be easier if you can obtain the complete system hardware, software and support from one vendor. This way all you should have to do is go to one vendor and say "FIX IT!" If multiple vendors are involved don't be surprised if the software man blames the problem on the hardware and vice versa.

Last, but not least, who will set up the system, train you on the system, and who will be your support base when you have problems?

Do not expect to have a complete system on line immediately. Bring it up in phases, such as accounts receivable and payroll. It takes time to convert a system from manual to computer and learn it too. Do not overwhelm yourself.

If you plan properly, find the right match, and implement it effectively, you will find it to be very rewarding when you create your first reports and financial statements.

ON THE COVER

Opihikao, by Larry Lovett

This image was created by hand using Lumena/8 software, a program designed specifically for artists by John Dunn, founder of Time Arts Software. Capable of producing 16.7 million colors at 2,000 lines of resolution, the computer system includes an XT computer with a #9 engineering revolution graphics card, GTCO digitizing tablet and stylus, the Mitsubishi RGB monitor and other enhancements.

Larry Lovett has been the pioneer computer artist in Hawaii since 1984. He studied painting in Paris and New York where he earned his Masters degree from Columbia University. His most recent show was at Honolulu Hale in February, 1989. In the coming year his work will be featured at the Smithsonian Institution and the Museum of Modern Art in New York. He is a freelance artist and teacher living on Oahu.

Computer Networking Basics

By Tom N. Cesar

Picture the members of your sales team with workstations, each capable of gaining immediate access to centralized inventory and client database all at the same moment. Now see them print out individual sales summary reports for the month from a central laser printer. Note in the picture how each of their desk areas are free of clutter because they are sharing resources.

Complex communication and data processing tasks now call for the simultaneous and instantaneous sharing of resources: software, disk drives, printers, and modems.

We no longer are satisfied users of stand-alone personal computers (PCs) that were first introduced in the 1970s. The landmark answer? Local Area Networks (LANs).

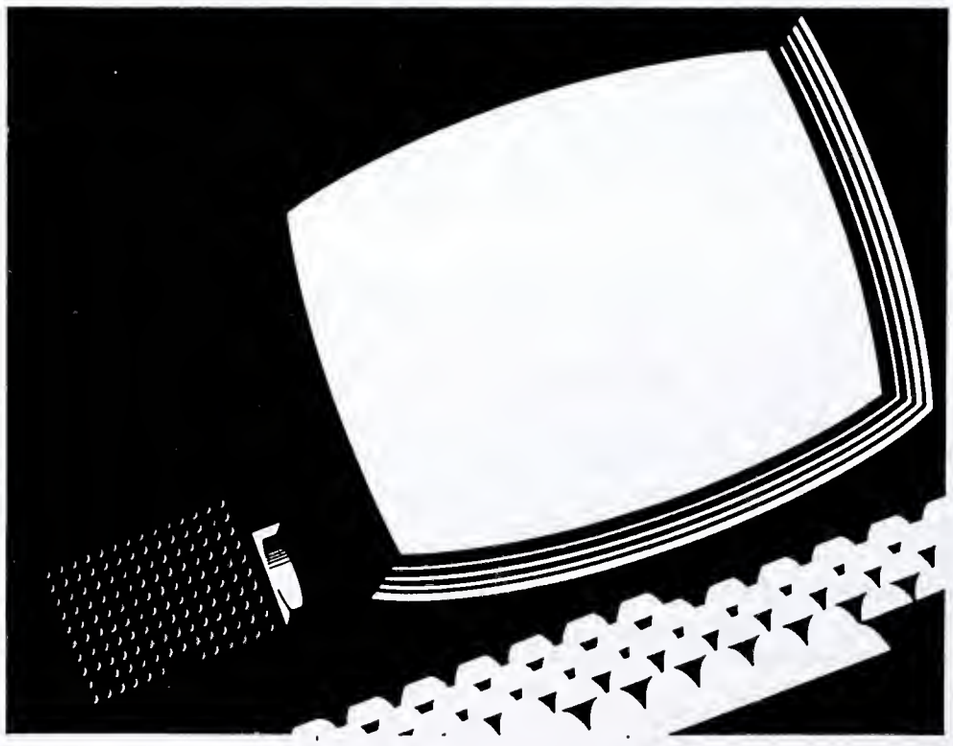
LAN refer to groupings of stand-alone, individual computer systems physically interconnected by cables. They allow connected workstations, usually attached to a central hub computer called a "file server," to share information and input/output devices.

In the past, computer networks were for the few, brave businesses attempting to be on the cutting edge of office automation. These first-generation networks were costly and problematic, requiring maximum technical support and user pampering. All this contributed to the notion that the advantages of networking were not justifiable. Today, networking is both sophisticated and cost-effective. And although many of the "technical difficulties" and "bugs" have been eliminated, it is still recommended that you consult a networking specialist to plan, administer and maintain your network.

For the organization requiring the capability for two or more computer users to share information and resources, networking is the logical answer. Networking is an intermediary step between single-user, stand-alone computers and a multi user configuration. As opposed to a multiuser mini or mainframe computer, a LAN distributes its processing rather than centralizing it. This means that a LAN does not utilize a main central processor; it allows for each individual user to maintain processing at its own workstation. When shared data storage, software and resources are requested, the file server (hub) comes into play as the network's central traffic cop.

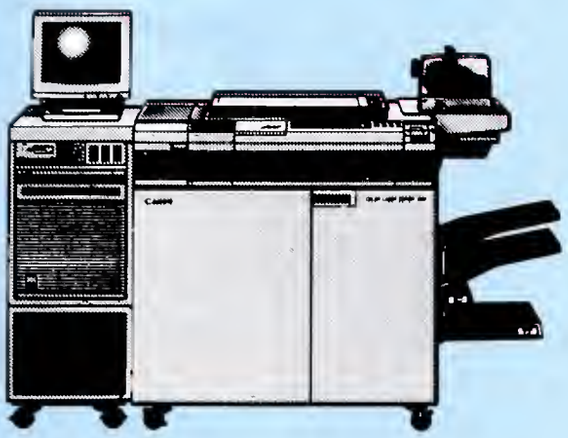
You have the choice to use the LAN or use the workstation in a stand-alone mode. For small businesses this is a plus; in the event of a file server crash, you can use your workstations until the file server is up and running again.

While cost margins and pricing are considerations, compatibility and support are your primary concerns when selecting a LAN. Keep in mind also your immediate and future needs, your budget, and compatibility with your existing equipment when you assess your alternatives. It may not be necessary to "junk" your existing gadgetry; you may be able to realize more mileage out of your existing hardware and software and capitalize on your original investment.



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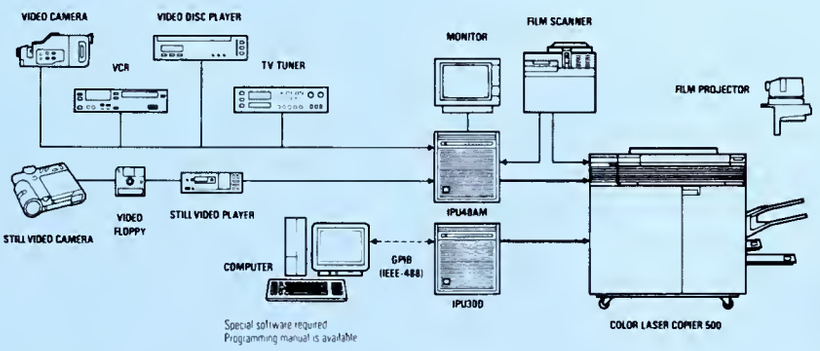
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Desktop Publishing

By Sheila Ann Moore

Desktop publishing is the process of using a computer system to design, write, edit, compose, layout, and print a document. Ultimately, the more appealing the document the greater the chances are that people will pay attention to its content. Each of the three levels of desktop publishing (entry, intermediate, and advanced) has its own individual hardware and software requirements.

Entry-level desktop publishing is for the individual who wishes to distribute an informal document to a small number of people or friends, for example, the neighborhood newsletter or the inter-office flyer. The entry-level publisher would be using an inexpensive and easy-to-use system. The monitor most likely would be a monochrome or low resolution color monitor, and the printer would be an inexpensive dot-matrix printer.

The advantage of desktop publishing over traditional word processing is that it allows the user to combine text and graphics on a single page.

The next level of desktop publishing is the intermediate level for people who wish to produce brochures, letters, manuals, training materials, and reports where the document's appearance is important. What is seen on the monitor should coincide with what is seen on the printed document — WYSIWYG — what you see is what you get. Speed is important when making changes within a complicated document. Expense is also a major consideration from the intermediate stage on. The expense of a flexible computer system that will do what this user wants it to do, with expandability for future growth, will go up proportionately with its capabilities.

The advanced desktop publisher produces newsletters, magazines, and advertising material that must look professional, be inexpensive and take less time to produce when compared to the traditional publishing methods. Because of the complexity and high volume of work, the professional desktop publisher requires a large screen monitor to eliminate the constant frustration of not being able to see a complete document at a single glance. Depending on the user's needs, the monitors are full page or two page displays in black and white or color. Shades of gray or color as well as the screen resolution also are important.

Printing takes on two forms: proofing and final printing. For proofing, a quality laser printer and/or color laser printer is necessary, and some individuals need an image setter. For final printing, a professional printing business does the rest.

Software is a major consideration at all levels.

It depends entirely on the individual's needs in the amount of power and flexibility required when creating, designing, and printing documents. Seldom will one software package do it all.

Most users will have word processing, graphics and design, and page layout programs that work with each other. For instance, the text is written in a word processing program. The illustration is done in a graphic and design program. Then the text and graphic is combined in a third program for the page layout.

Of course many of these programs will require more memory on the computer. Be sure that the computer system satisfies the hardware requirements of the software programs. If not, check to see if the system can be expanded or upgraded. Optimally, if the computer system has not been purchased, decide on what software is needed and then buy a system that will be capable of running that software and have the flexibility to expand as future needs may increase.

There are other peripherals and accessories that make desktop publishing easier. Particularly for the PC, a mouse is a nice item to have. Even though you can use most desktop publishing programs without this convenient input device, the procedure is cumbersome and can be difficult. Another input device is a scanner. Rather than trying to recreate a drawing or photo on the computer, a scanner works like a copier and copies the graphic directly onto the computer screen.

Key points to remember when purchasing a desktop publishing system are identifying the tasks and the type of document desired to be printed, finding the appropriate software to accomplish the objectives, and then choosing the appropriate system solution. There are a number of choices and options. Sorting through them can be tedious without professional guidance. If you would like to be a desktop publisher or you wish to improve your system, consult the professionals who have the expertise to propose the proper solution and to guide your decisions.

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ComputerLand of Hawaii

There have been sweeping changes and a large infusion of newness at ComputerLand Hawaii through the past few weeks, but the company's primary objective is basic and traditional: The customer comes first.

"Actually, it's closer to first, last, and always," says Doug Garcia, ComputerLand's General Sales Manager. "We have made a renewed commitment to our customers, a very strong commitment. Serving them, and supporting them, is top priority."

The rapid innovation that began when ComputerLand Hawaii was sold in June to TGG Computers, Inc., reached another high point recently with a total consolidation of operations. The Kawaiahao Plaza and Stadium Mall stores, along with the business offices, were moved into 10,500 square feet of totally refurbished space in the Malia Building at 2200 Kamehameha Highway.

"Again, this is a step toward achieving and maintaining maximum customer satisfaction," Garcia said. "And it is only part of a continuing program of progressive steps we have planned. We are in an industry that is growing and changing rapidly, and we believe that to be in the forefront of that industry, first-class customer service is imperative. Purchasing hardware and software is only the first step in owning a computer — the customer needs, and deserves, ongoing support."



Bill Clisham, ComputerLand Hawaii's Customer Relations Manager, said the firm's more than 60 employees will emphasize communications with customers, follow-through, immediate response to questions and needs, and quick attention to concerns and problems.

"These are basic things, we know," Clisham added, "but we sometimes forget how vital they are. We want to further establish integrity and credibility, through expanded and specialized customer services.

"We have our Hardware/Software Integration Group, to pre-test configurations to make sure they work before they're sold, and to use as consultants if technical problems come up.

"ComputerLand Hawaii has the only technical group, Certified Novell Network Gold, and has a resident Certified Novell Engineer. This translates into an up-to-date, fast, efficient response to the network needs of the Hawaiian market.

"Our slogan sums up what we're doing pretty well: ComputerLand — business to business. Person to person."

Connecting Point Computer Centers of Hawaii

Since the opening of its Honolulu store in May, 1988, Connecting Point has become one of the fastest-growing and most-successful computer stores in Hawaii. Starting with just four employees, Mike Klein, local Connecting Point franchise owner, has added a second location in Maui and now employs a staff more than 20. Although Connecting Point is a somewhat new name to Hawaii, there are more than 300 locations nationwide.

"Hawaii's businesses needed a computer store that tailors to a particular company's or individual's unique needs," explains Klein. "Our staff at Connecting Point is made up of sales and support teams which specialize in different business categories. We have specialists in accounting, CAD, desktop publishing, education, graphic arts, and networking. More areas are sure to follow as we already realize that there is a great need for specialized computer solutions in other fields."

Connecting Point is an authorized dealer and service center for Apple, Epson, Hewlett-Packard, NEC, and Novell products. The service department has five certified technicians with an individual specializing in Apple repairs and another in Epson, HP and NEC repairs.

Gray Associates

Okidata, a subsidiary of the large Japanese manufacturer, Oki Electric, has just introduced its latest bulletproof printers, but this time, priced in the range for the home or almost any small business. The model 380 printer has a list price of $529 and uses 24-pin printheads to provide excellent letter-quality printing from computers. The pins form characters which rival the best typewriters. The 24-pin technology also creates excellent graphics as well as being able to print draft (loose dots) quality documents at a speed of 180 characters per second. The 380 offers a printhead life of 200 million characters, more than double that of the competition. This low-cost printer also offers simple-to-use paper parking: fan fold paper backs out whenever the user wants to insert single sheets. Six resident fonts are selectable from clearly marked front-panel controls: Courier, Roman, Prestige, Helvette, Letter Gothic and Orator. Gray Associates and a number of other service centers in Hawaii provide service when needed.

Okidata is also introducing three high-end FAX machines. These machines all provide automatic paper cutting, so you don't find a hard-to-handle roll of messages in the hopper in the morning. 9600 bps speed assures 15 seconds per page transmission, to cut down on telephone line costs. Ten to 40 pages may be stacked in the machine for sending, to free the operator for jobs other than feeding long documents into the fax. Documents may be set up for delayed transmission and for confidential transfer of images. Fast dial to frequently used locations by one-touch and two-touch dialing. Advanced error correcting (CCITT standard) on the high end printer produces error free messages at the other end.

In addition to the bulletproof printers and fax machines from Okidata, Gray Associates sells Toshiba Laptop computers, Samsung desktop computers and Novell network operating systems through a network of talented dealers in Hawaii, Guam, Samoa and the Marshall Islands.

Heath/Zenith Computers & Electronics

At Heath/Zenith Computers & Electronics, its corporate strength is quality and performance — no matter what computing solutions a business needs.

Heath/Zenith is a nationwide sales *and* service network ready to give solutions . . . not just boxes. Its computer and electronic centers were founded in 1962 — and have grown in continuous operation since then with 65 stores around the country. Today, its in-store technical experts and systems analysts are supported by a 250-member corporate sales team. And all of the Heath/Zenith stores are corporately owned: The company offers no franchises. This means you'll find the same consistent, quality products and services wherever you buy.

As a wholly owned subsidiary of Zenith Electronics Corporation, Heath/Zenith is backed by the 70-year quality heritage of a Fortune 200 company with 1988 sales of more than $3.2 billion. So, Heath/Zenith customers can depend on the staying power of an established leader in the business computing field.

Heath/Zenith is the consumer retailing and business-to-business corporate marketing wing of Zenith Computer Group, a triad of independent Zenith subsidiaries. Together, they're responsible for the design, development, distribution and marketing of the Zenith Data Systems computer line. In addition, they are authorized dealers for Apple Computer, Hewlett Packard, Novell and 3COM networking products, Epson printers, Radius monitors for PCs and Macintosh, and other quality products.

The Heath/Zenith stores pride themselves on the quality of their salespeople. They consider themselves more as solution-persons than salespersons. They've each been extensively trained to help customers choose the most cost effective solutions. The outbound salespersons have been in the microcomputer business an average of five years, and with Heath/Zenith over three years. Customers have the security of knowing that the person they are working with now will be the same person to call next week, or next year.

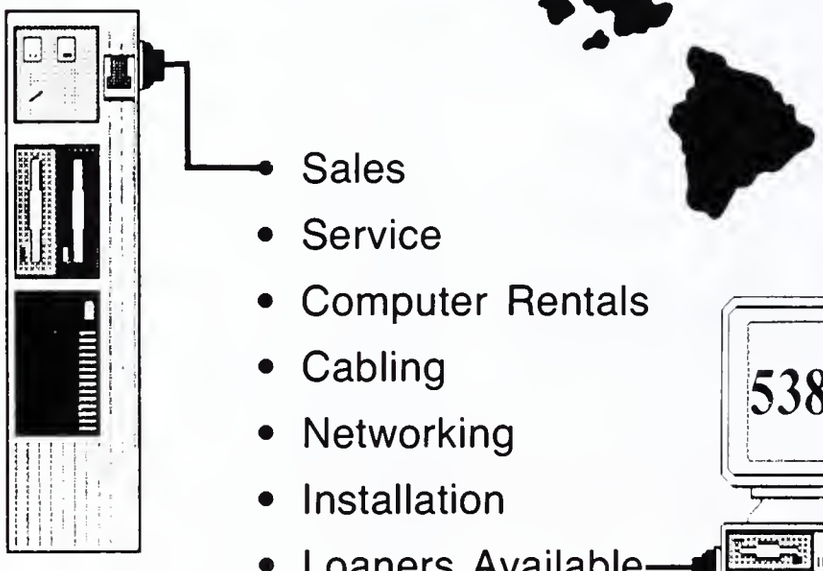
The Hawaii store has been recognized with numerous awards for sales achievement and customer support. It's been the #1 store in Apple sales for the entire Heath/Zenith chain for the last three years. With the recent introduction of the new Macintosh Portable and the 25Mhz Macintosh IIci, Heath/Zenith hopes to continue this record of excellence.

Heath/Zenith has just undergone a major expansion and added over 50% more space for additional services. It has increased the size of the service area, added a classroom and expanded the outside sales force.

Located at 98-1254 Kaahumanu St., Pearl City, the Hawaii store is located just minutes from downtown Honolulu, just off the Pearl City - Waimalu off ramp. Its phone number is 487-0029 and the FAX number is 487-2900.

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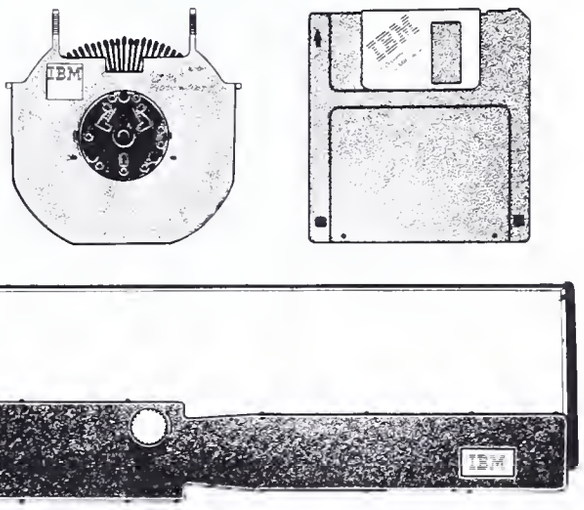
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This technical innovation and quality is built into every HP product, such as LaserJet printers, Vectra personal computers, HP3000 business computers and HP9000 engineering workstations and multi user systems. These state-of-the-art products, teamed with the industry's leading software suppliers, provide comprehensive solutions for better information management.

Selecting HP means more than merely choosing a computer system. It means acquiring a solid business partner, because HP specialists listen to and understand customers' specific needs. They work as a team to match the system and solution to the need. The HP Honolulu sales office has been providing local businesses with quality products, strong technical support, and excellent service for the past 18 years.

According to Arnold Goto, HP Honolulu sales representative, "HP has a strong commitment to customer satisfaction. It's a major ingredient of our corporate philosophy that goes beyond good quality and competitive prices. It means producing products of the highest quality, pricing them competitively and then delivering them with the highest-rated support services in the industry. This is all tied into actually finding a better way for our customers to reach optimum performance in their demanding environment."

Hewlett-Packard is an international manufacturer of measurement and computation products and systems recognized for excellent quality and support. The company's products and services are used in industry, business, engineering, science, medicine, and education in approximately 100 countries. Founded in 1939, the company is celebrating its 50th anniversary this year. It has 93,000 employees and had revenues of $9.8 billion in its 1988 fiscal year. Hewlett-Packard ranks 39th in the Fortune 500 and has been rated #1 in overall customer satisfaction by Datapro Corporation for the past six years.

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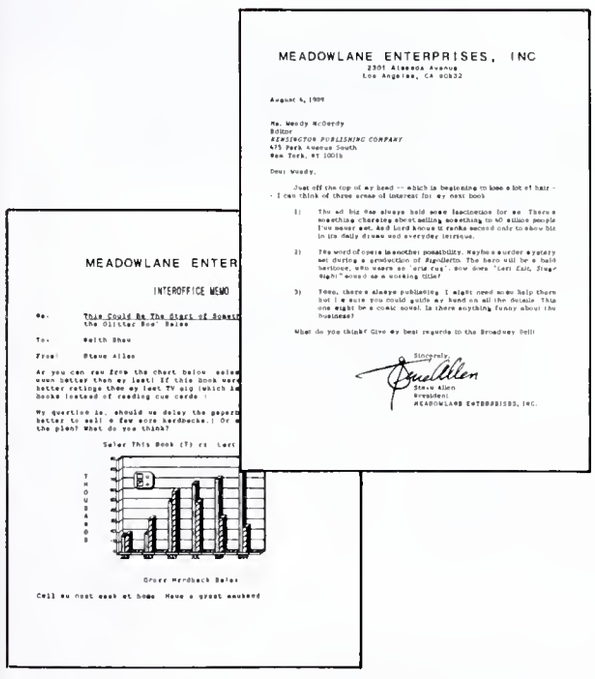
Inacomp Computer Centers

Inacomp is a full-service computer center offering a combination of expert sales advice, sophisticated technical service, helpful software support, and customized training.With a chain of more than 100 business centers nationwide, Inacomp has become one of the largest computer resellers in the country.

Rick Inatome, founder of Inacomp, started the computer company more than 12 years ago. Shortly thereafter, Tom Pointe, serving now as V.P. of Inacomp's Honolulu location, joined the



The New OKIDATA 380 Puts More "Show" in Your Business.



MEADOWLANE ENTERPRISES, INC
2301 Alameda Avenue
Los Angeles, CA 90032

August 4, 1989

Ms. Wendy McCurdy
Editor
REMINGTON PUBLISHING COMPANY
475 Park Avenue South
New York, NY 10016

Dear Wendy,

Just off the top of my head -- which is beginning to lose a lot of hair - I can think of three areas of interest for my next book

1) The ad biz has always held some fascination for me. There's something elusive about selling something to 40 million people I've never met. And Lord knows it ranks second only to show biz in its daily dirt and everyday intrigue.

2) The word of opera is another possibility. Maybe a murder mystery set during a production of Rigoletto. The hero will be a bald baritone, who wears an "ariette"; how does "Last Exit, Stage Right" sound as a working title?

3) Then, there's always publishing. I might need some help there but I'm sure you could guide my hand on all the details. This one might be a comic novel. Is there anything funny about the business?

What do you think? Give my best regards to the Broadway Bell!

Sincerely,

Steve Allen
President
MEADOWLANE ENTERPRISES, INC.

MEADOWLANE ENTER

INTEROFFICE MEMO

Re: This Could Be The Start of Someth... the Glitter Era' Sales

To: Keith Shaw

From: Steve Allen

Ar you can rav from the chart below sales even better than my last! If this book were better ratings than my last TV gig (which is Books instead of reading cue cards -

My question is, should we delay the paperb... better to sell a few extra hardbacks. Or w... the plan? What do you think?

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The output samples above were printed on a MICROLINE 380 using WordPerfect 5.0 and Gemgraph.

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company as a technical expert. Soon Ken Schobloher was working with Inatome and Pointe, and the three formed Inacomp. Today, Schobloher is the president of Inacomp in Honolulu, which was established in May, 1988.

Whether a company is planning to purchase its first small business computer or to expand an existing computer base into a Local Area Network, the people at Inacomp would like to help.

As an authorized dealer for Compaq, Hewlett-Packard, IBM, Epson, Toshiba and Novell, Inacomp offers a wide range of computer products and solutions.

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Island Newworking Computer Centers has grown to become Honolulu's premiere computer service business, featuring radio-dispatched technicians for fast-response, on-site computer service and repair calls. They are authorized Novell and 3 COM computer network installers. Their staff includes specially trained and experienced technicians for handling the critically important network cable installation projects.

Island Networking also provides computer equipment rentals, lease-to-own programs and sells a wide variety of brand name product lines and computer accessories. At their new street-front service center location in the Gold Bond Building on Ala Moana Boulevard (renamed the HonFed Bank Building), Island Networking features a new retail sales showroom. Customer parking is validated.

Entering its fifth year of business, Island Networking has progressed from a one-man, on-site computer repair service to a fully staffed computer support facility handling repairs, on-site service contracts, network installations and support, rentals and retail sales.

MicroAge Computer Stores

The MicroAge team services and sells all the most respected names in computers, printers, accessories, peripherals, and supplies. They'll help you design your initial computer system, or to integrate, upgrade, and network your current system. They'll show you the advantages of renting or leasing, and help you "try before you buy," — you lease a system to see if you're comfortable with it before you decide to invest in it.

MicroAge's Extended Service Program, E.S.P., minimizes down time, and it's backed up by a complete stock of quality supplies and peripherals.

In 1976, when Apple Computer was still in a garage and IBM Corporation was yet to build its first PC, Jeff McKeever and Alan Hald founded the first computer store in Arizona, one of the first in the United States. Other entrepreneurs joined in, and nowadays there are more than 220 MicroAge stores in America, including the one run since 1984 in Honolulu by Kris Kapur.

An MBA whose degree is in Information Systems, Kapur worked as a computer programmer and systems analyst from 1969 to 1972 in San Francisco. When he relocated in Hawaii, he taught computer sciences at Leeward Community College from 1973 to 1981. Kapur opened Honolulu's Computer Market in

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1982, and transferred his energy and expertise to MicroAge two years later.

In addition to the E.S.P. service warranty listed above, Kapur is also proud of the MicroAge Supply System, a quarterly catalogue that lists more than 1000 items for sale. Customer support for questions is another feature.

MicroAge also offers printers and plotters for use by its customers, and sends Educational Systems Consultants into public and private schools and colleges to assist teachers, school staff, and students.

Drop in and check out MicroAge at its convenient location, 680 Ala Moana Boulevard, across from the Gold Bond Building.

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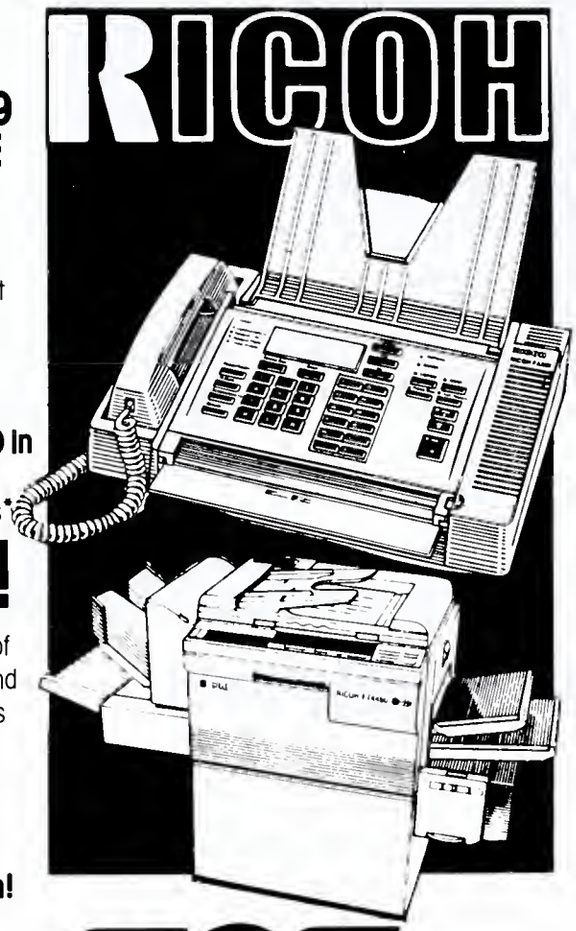
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The Office Place

"One important consideration in office automation that is often overlooked is the need to assess the particular requirements of *each* workstation," Bob Takei Jr., V.P. of Marketing at The Office Place points out. "In order to arrive at the most viable solution it is essential that each computer user's duties are clearly defined before the equipment is selected," explains Takei.

"For example, today's typical secretary has to deal with constant interruptions during the course of a normal day and is expected to accomplish a number of different administrative tasks at her workstation," says Takei. "The IBM Personal Typing System/2 is an integrated office solution that is designed specially for secretaries. By combining an advanced word-processing function, the ease of use of a typerwriter, and the power of a personal computer, this system is ideal for the work that secretaries do."

The IBM Personal Typing System/2 and Personal System/2-286 meet the needs for an integrated secretarial workstation with DOS or OS/2 capability. The small footprint, two expansion slots and personal computer capability make it ideal for a variety of professional office workers and educational institutions. Both systems provide end users with a migration path to the workstation environment, including connectivity and OS/2 capability.

Specializing in office automation systems, The Office Place is Hawaii's exclusive authorized dealer of IBM typewriters and Personal Typing Systems. In addition, they represent IBM as an authorized IBM supplies and printer dealer, as well as Sony dictation systems, Canon and Casio calculators, Olivetti Video Typing Systems and PCs, and Leading Edge computers. "We can fill the need of almost any customer," Takei says, "and we like to consider ourselves a business partner with each of our customers."

The Office Place maintains a large local inventory and has locations in Honolulu, on Maui and on the Big Island, plus an agent on Kauai. With the ability to demonstrate, install, and provide technical support to virtually any business in the state, The Office Place can assist companies with implementing an automatic replacement program, which may involve trade-in of older IBM equipment. Businesses looking to replace their office equipment or upgrade their office automation systems can call The Office Place at 847-0221 for a needs analysis.

SAIC Comsystems/DSSI

SAIC Comsystems, a division of Science Applications International Corporation, and Decision Support Services, Inc. have teamed to bring local businesses the most complete computer systems solutions in Hawaii. The companies specialize in working with businesses to help them develop a competitive edge through new or improved automation. "We evaluate where a business is now and how it is using technology," says DSSI President Robert Vierck. "Then, based on where the organization wants to be in five years, we lay out a plan of how it can get there." DSSI is a three-year-old, Hawaii-based company providing systems consulting and design.

"What makes us unique is our teaming arrangement," says Tom Howes, manager of Business Development at SAIC Comsystems, whose parent SAIC has 10,000 employees in a broad range of scientific, engineering, and technical services across the nation. In the early stages of a project, DSSI has the dominant role working with a business's owners to help them decide what systems best fit their objectives. Later, as the project moves toward implementation, SAIC takes the lead, bringing in highly trained engineers and technicians to implement the solution. "We also help a company construct their system, demonstrate its operation, provide training and documentation, and even write the software, if desired," says Howes.

"We not only provide advice on what you need, we guarantee it will work, because we work together to implement it," says Vierck. Clients of DSSI and SAIC Comsystems include top Hawaii, mainland, and international corporations as well as federal and state governments.

Servco Office Systems

Servco Office Systems is a division of Servco Pacific Inc., a well known kamaaina company with over over 70 years of business experience in Hawaii. Servco Office Systems is the only authorized Ricoh dealer/distributor in Hawaii.

According to Servco's Guy Higashi, Ricoh is the recognized leader in the manufacturing and marketing of office automation equipment including copiers, facsimile equipment, offset duplicators, and supplies.

One of the new products from Ricoh is the FT4460 copier. The 4460 can handle 21 copies per minute, 11 reproduction ratios, and automatic paper selection. It has a push-button color-copying feature, convenient two-sided copying, and a 20-bin sorter for collating. There is even an optional data printer feature, Higashi explains, that stamps the date or time on every copy you make.

As a full service dealership, Higashi adds, they back your investment with a full line of supplies and factory-trained technicians whose friendly, personal and professional service sets them apart from the competition.

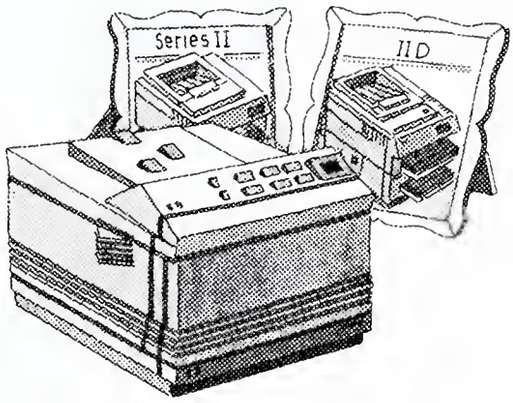
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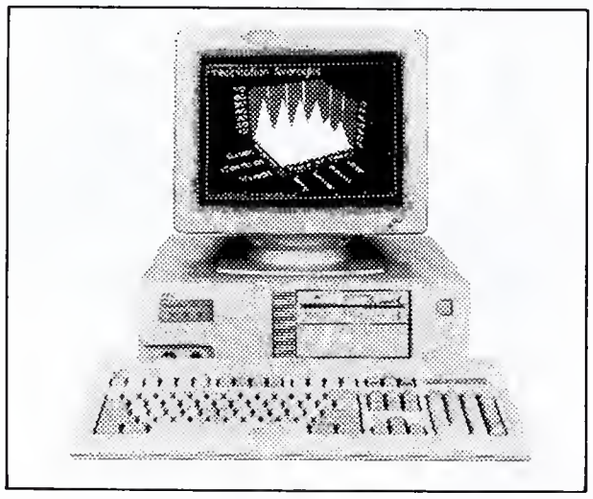
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University Copy Systems

University Copy Systems is an exclusive full-line Canon sales and service organization, dealing in Canon copiers and facsimile machines. Based in Irvine, California, University Copy Systems has over 26 years experience in the business and is one of the top five Canon distributorships in the country. "Canon has the most advanced, comprehensive selection of paper copiers in the business," Vince Gannon, general manager of University Copy Systems of Hawaii explains, "and our newest line is miles ahead of the competition." A recent survey by Dataquest, a Dun & Bradstreet subsidiary, shows that Canon copiers are chosen by more companies than Mita, Ricoh, Minolta, and Toshiba combined.

As the industry innovator in color copying, Canon U.S.A. recently made a quantum leap in full-color, plain-paper copying with the introduction of the Color Laser Copier (CLC) 500 system. The first color copying system to offer connectivity with video and still video equipment, television and computers, the CLC 500 offers unmatched color quality and virtually limitless creative possibilities.

The Color Laser Copier 500's optional Intelligent Processing Unit (IPU) allows the CLC to assimilate the signals from a variety of electronic sources. Used with GPIB (IEEEE-488) computer interface, the copier's computer connectivity is made possible. Canon currently is working with several prominent manufacturers to develop compatible software.

According to Gannon, Canon is the recognized leader in color laser and black-and-white copiers, but it also produces an excellent line of facsimile machines. Surveys show that Canon fax machines received the highest ratings in ease of use, reliability, quality of reception, and ease of replacing paper.

A graduate of St. Louis School and University of Hawaii, Gannon went to the mainland after college and became involved with University Copy Systems of California. "Working with industry leaders like Canon U.S.A. and University Copy Systems has been a great experience, and the opportunity to return to Hawaii as general manager was like a dream come true," says Gannon. "And now that we're here, we will provide Hawaii's businesses with the same quality products, sales and services we've offered on the mainland for years."

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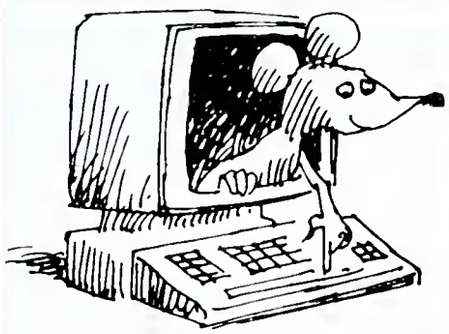
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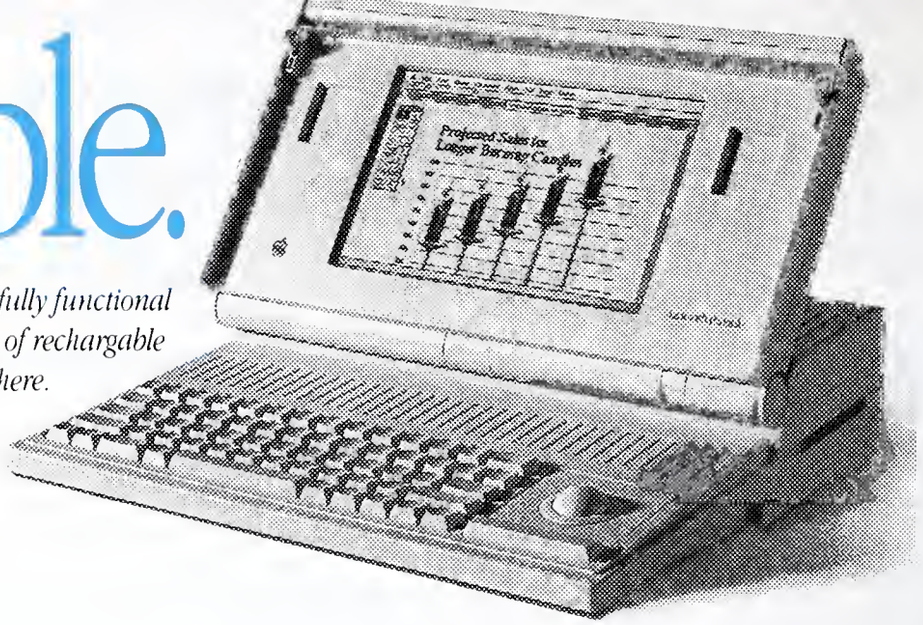
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and the use of free base, and finally crack cocaine, became available more recently.

Routes of administration

Cocaine is consumed by humans via several different routes. Traditionally, cocaine was absorbed by chewing the coca leaves. Some of the cocaine was absorbed through the mucous membranes, part was swallowed and absorbed in the gastrointestinal tract. Reasonable plasma levels can be obtained by oral ingestion of cocaine, but the absorption is slow, with peak plasma levels seen after about 65 minutes. Thus there is no "rush" associated with oral ingestion. As a result, it is not a popular route of administration for recreational use.

The customary and popular route used to be by inhaling intranasally ("snorting"). The individual who snorts cocaine will take in about 65% of the drug; the remainder will be lost because of the vasoconstriction of the nasal muscosa associated with each inhalation and the build-up of scar tissue. Vascular constriction is so complete that necrosis of the living cells occur, often leading to a perforated nasal septum. The effect occurs in about 2 minutes, whereas peak plasma levels are achieved 30 minutes after the drug is inhaled. The half-life duration via the intranasal route is approximately 40 to 60 minutes.

The intravenous route is popular with individuals who have developed a dependence on cocaine. The initial effect is noted within 1 to 2 minutes, peak plasma levels occur immediately thereafter and the elimination half-life is 40 to 60 minutes. The danger with this form of use is the inability to titrate precisely the amount of drug an individual wishes to take in, thereby running the risk of an overdose.

Finally, a way of absorbing cocaine is smoking it. When cocaine is leached out of the coca leaf, it is in the form of a hydrochloride salt. Free basing involves alkalizing the hydrochloride salt. Crack cocaine has become popular because it is easy to convert free base, by adding baking soda and heating, to form pure crystalline cocaine, which is not destroyed by heating and thus can be smoked. The rising curve of plasma level after smoking cocaine is similar to that seen after intravenous injection. Use via smoking had increased from 1% in 1977 to 18% in 1984.

Neuropharmacology of cocaine

Under conditions of unlimited access to cocaine, monkeys and rats will consume it to the exclusion of food, water or contact with other animals. In one study almost all the rats allowed unlimited access to cocaine were dead in a month, a mortality rate 3 times higher than those ingesting heroin.

Since cocaine affects many neurotransmitter systems (dopaminergic, noradrenergic, and serotonergic) thought to be important in regulation of mood, behavioral studies suggest involvement of all these systems as well as having a generalized effect on the central nervous system. Recent research involving intracranial self-stimulation (ICSS) and positron emission tomography (PET) seems to be promising in the examination of the effects of cocaine on the intact brain, thus allowing a further understanding of the physiological influence of this powerful stimulant.

Cocaine has been shown to block re-uptake of dopamine into the pre-synaptic neuron, thereby rapidly increasing the amount of dopamine in the synpatic cleft and augmenting dopamineric transmission. Mesolimbic and mesocortical dopaminergic tracts in the brain are probably integral parts of the central nervous "reward" system. The "dopamine depletion hypothesis" in cocaine addiction suggests that the "crash" following chronic or high-dose cocaine ingress results from depletion of pre-synaptic dopamine and the "craving" by the compensatory super-sensitivity of post-synaptic NE receptors, resulting in depression and the post-cocaine dysphoria and anhedonia.

Cocaine also inhibits the pre-synaptic uptake of tryptophan and re-uptake of serotonin (5-HT), thus rapidly depleting 5-HT. This system may be involved in motor stimulation and reward systems. The resulting depression and anhedonia so characteristic of the cocaine abstinence syndrome is consistent with deficiencies of serotonin.

Clinical syndromes

Richard Rowson and his colleagues at the Matrix Center in Southern California have identified 4 phases of cocaine addiction: Introductory, maintenance, disenchantment and disaster.

The Introductory Phase, or "Isn't this a great drug?," is characterized by a feeling of increased well-being when using the drug. This occurs when the drug is used only in a social setting, although in the later part of this phase it may also give the perception of increased work performance. No studies have ever shown an enhancement of performance, however, except that one can perform reasonably well when otherwise one would feel exhausted. The individual can restrict his use of the drug in this phase and is not compelled to use all of the available cocaine.

The Maintenance Phase, or "It sure is expensive, but it's worth it," is characterized by use of the drug for relief of depression, boredom or for sexual enhancement. The person is using it on a more regular basis and often is diverting money to pay for needed food, rent, etc., to the purchase of cocaine. At some point in this phase individuals cross the line between abuse and dependence. This is determined clinically when the patient can no longer save his cocaine for later use. Thus once he starts using it, he will binge until all the available cocaine is gone. Increasing financial problems develop, periods of depression and anhedonia are more frequent and work performance becomes very erratic.

The Disenchantment Phase, or "I really should cut down," is characterized by the use of cocaine to relieve lethargy, medical problems, financial disaster and relationship disruptions. Only occasionally does euphoria occur because of the tolerance that has developed. Patients begin to present for therapy when in this phase.

The Disaster Phase, or "I know I have to stop, but I can't," is characterized by multiple medical problems, including weight-loss, severe depression, paranoia (both on and off cocaine) and relief from fatigue and depression only when using cocaine. Persons who reach this phase before seeking treatment are often also dependent

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on other drugs and require inpatient therapy for several months.

Symptoms of abstinence

Gawin and his associates have described a triphasic abstinence pattern that confirms the physiological effects characteristic of withdrawal from cocaine dependence. The 3 phases can be categorized as "crash," withdrawal" and extinction."

Phase I, or the "Crash," occurs within 9 hours of cessation of the use of cocaine and lasts for about 4 days. There is an initial agitation and an intense craving for cocaine. Within 24 hours there occurs marked fatigue, depression and hypersomnolence. The person awakens and is very hungry, especially craving sugar. The exhaustion, depression and hypersomnolence of the crash probably reflect acute neurotransmitter depletion caused by the preceding cocaine binge. Clinical recovery depends on sleep, diet and probably time for the synthesis and repletion of neurotransmitter. Crash symptoms mimic those of neurovegetative depression in major affective disorders, so assessment of symptom needs to be postponed.

Phase II, or "Withdrawal," occurs on or about the 5th day of abstinence and typically lasts for 8-10 weeks. There are 2 distinct periods in this phase: The first period lasts for 2-3 weeks and is characterized by a gradual return to reasonably normal sleep patterns. The mood returns to a more normal state but frequently remains moderately depressed. Minimal craving for cocaine occurs during this period and the patient often begins to doubt his dependence on this substance. Unfortunately, he is frequently discharged from inpatient therapy at this point and often returns to the same social situation that initially fostered cocaine abuse.

The 2nd period of withdrawal is labeled the "Honeymoon Period" by Rawson and is characterized by profound anhedonia, anergia, over-involvement with work, inability to focus, a return to the use of alcohol or marijuana, episodic cravings and the termination of treatment. As expected, the relapse rate is extremely high during this period.

Phase III or "Extinction" can last for an indefinite period. Again, this phase can be divided into 2 distinct periods: The Adjustment period usually lasts anywhere from 3 to 6 months and begins with either a brief relapse or a breakthrough in counseling such that the patient finally realizes that he has a chronic, relapsing disease that he has no ability to control. He can then begin to examine issues that will lead to a lifestyle that is no longer dependent on mood-altering drugs or external sources of pleasure.

The final period of Phase III can last indefinitely and is often referred to as the "resolution period." This phase typically begins around the 6th month, but may not begin for 9-12 months. The patient will still have episodes of intense craving, especially if he resumes the use of alcohol or other mood-altering drugs. The patient may also report intermittent periods of depression, often unrelated to environmental stimuli. He has usually developed a good insight into his disease, and has become an active member in a 12-step program, such as Cocaine Anonymous or Alcoholics Anonymous. For most patients formal individual psychotherapy should not begin until the patient has established at least a measure of solid sobriety. Although long-term abstinence is the ultimate goal, relapse should be dealt with as part of the disease process rather than as a failure of treatment.

Treatment

Treatment usually takes place in general psychiatric settings or in drug treatment facilities. Despite the fact that cocaine may be a highly addicting drug in animal models, treatment of humans must be based on the concept of dependency as a disease. This implies that there is a genetic predisposition in dependency on cocaine, alcohol and other durgs. Current treatment of cocaine dependence is often simply the administration of alcohol or opiates applied without regard to the specific problems of the neurotransmitter deficiencies known to occur in cocaine withdrawal. Long-term treatment is essential, of at least 1 year of weekly counseling sessions and involvement in a self-help group, at an absolute minimum.

Pharmacological adjuncts to treatment are gaining favor and early studies are promising. Several studies employing desipramine hydrochloride (Norpramin) have reported abstinence persisting in 92% of a desipramine group, as compared with less than 50% in comparison groups that were given other agents (lithium and methylphenidate). Long-term use of desipramine appeared to reverse anhedonia in cocaine abusers. Open trials with imipramine, trazedone and maprotiline have also been reported as increasing abstinence rates substantially.

Several investigators have successfully prescribed bromocriptine and amantadine to reduce the craving for cocaine. Amantadine is preferred by many because of its minimal side effects. Other authors have reported unsuccessful experience with lithium, neuroleptics and calcium channel-blockers.

Considerable interest has been generated in the use of amino-acid precursors for the neurotransmitters known to be deficient in the cocaine-withdrawal syndrome. Several open studies have reported success with combinations of trysonine, phenylalanine, and l-tryptophan. The lack of side effects and the preliminary success reported in several large studies look promising.

Conclusion

Cocaine has been found to be a highly addicting drug, causing dependency, with a well-defined clinical syndrome of abuse and withdrawal. This powerful stimulant affects a wide variety of neurotransmitters resulting in profound deficiencies, which can be correlated with the symptoms of intoxication and withdrawal. There is a clear-cut, cross-dependency with other mood-altering drugs; therefore, total abstinence from alcohol and other drugs of abuse is essential in the treatment of cocaine dependency. The deficiencies of neurotransmitters have been reviewed as well as the present state of research in the pharmacological treatment of cocaine dependency. Further research on the use of tricyclic antidepressants and amino-acid precursors of neurotransmitters appear to provide pharamacological adjunctive therapy for this chronic, relapsing disease. ■

*. . .Nick Teen and Al K. Hall**

Nicotine addiction***

John Slade, MD

Addiction to nicotine is the most common serious condition in medicine today. This chemical dependency has produced the largest epidemic of disease in this century, an epidemic that is beginning to wane in the United States but which is accelerating in the Third World. Widespread cultural acceptance of tobacco and the malignant fostering of use by cigarette merchants has perpetuated the epidemic.

Nicotine regularly causes addiction in its users. This condition is best viewed as a chronic disease with remissions and exacerbations. It is highly amenable to treatment, and primary-care physicians are ideally situated to manage this fascinating condition. Physicians have a larger role to play, as well, in the many opportunities that exist to prevent this condition in the young and to protect non-smokers from tobacco smoke pollution.

Over the last generation, abundant evidence of harm from tobacco use has flooded the scientific literature. Few pathogenic phenomena are as well studied or as thoroughly understood as is the relationship of tobacco use to a host of diseases. The Public Health Service estimates that 390,000 Americans died in 1985 as a direct result of the use of cigarettes, and British epidemiologist Richard Peto has estimated that 2.5 million people die annually around the world because of this vegetable. Furthermore, we know how to prevent these deaths, at least in principle.

Although the prevalence of tobacco use has declined in this country (dramatically so among white men), because of population growth, about the same number of people smoke now as in 1964. Furthermore, cigarette consumption is rising rapidly overseas, and although U.S. domestic per capita *consumption* is falling, domestic *production* is actually rising because of increased exports.

There are a number of reasons why it has been difficult to control this epidemic.

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** exclusive submission to HMJ

First, tobacco is a part of our social and cultural fabric. It has been an important part of the economy since the early 1600s, and it is represented today by a relatively large industry with tremendous political power. This has the twin effects of making it difficult to overcome hardbound attitudes, so that tobacco-control forces can be mobilized in the first place, and of making it exceedingly difficult for such efforts to survive running the gauntlet of determined opposition.

Second, nicotine, the active ingredient in tobacco, is a psychoactive, addictive drug. It produces a variety of pharmacologic effects (including manifestly unpleasant ones such as nausea, to which the novice rapidly becomes tolerant), and regular use often leads to remarkably persistent, drug-seeking behavior.

Third, the medical community is not accustomed to managing this condition. The scientific basis for management is now well developed, but physicians are not trained in how to approach this disease; models in the scientific literature use paradigms, such as "smoking cessation," which are foreign to medical thinking. Even with very simple approaches, physicians can have a marked effect on reducing smoking by their patients. With more sophisticated management of this condition, genuinely gratifying results may be expected.

The cultural context

The cash crop that made the early Virginia Colony economically viable was tobacco. This crop was used as legal tender in the Colonies and it secured loans from the French government to the fledgling United States during the Revolutionary War.

Cigarettes, however, are a recent arrival. Mass production was introduced by James Duke of the American Tobacco Company in 1884. With mass production came the opportunity (and commercial necessity) for fostering mass consumption through advertising. The use of cigarettes gradually rose over the next 30 years, but it only took off in an explosive manner following the introduction of a new national brand based on a novel blend: "Camels," using what rapidly came to be called the "American Blend," were introduced in 1913 by the R.J. Reynolds Tobacco Company. This product revolutionized the business, and other companies were soon forced to imitate it.

Unfortunately, cigarettes proved to be far deadlier than traditional tobacco products. Whereas alkaline nicotine (such as is produced from cigars, pipes, snuff and chewing tobacco) is readily absorbed across the nasal or buccal mucosa, acidic nicotine (from cigarettes) is not absorbed

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in the mouth or nose. A smoker must inhale in order to transfer the drug to the main site of action, the brain. Inhalation causes more rapid delivery of the drug, which enhances addictive potential, as well as more extensive and efficient delivery of the huge range of poisons to be found in tobacco smoke.

Cigarettes were regularly condemned during the first quarter of the 20th century; a number of states actually outlawed them. However, these laws were eventually repealed as cigarette smoking spread in a reaction to Prohibition (of alcohol) and because there were no firm data to back up the often outlandish statements made against the substance. This situation gradually began to change in the 1950s as new data began to accumulate, both in the laboratory and in the experiments of nature described by the epidemiologists.

Nicotine

This alkaloid has a wide variety of pharmacologic properties. It is generally classified as a stimulant, although it is also known to relax skeletal muscle. Tolerance develops with regular use. Over the first several years of use, the quantity taken into the body daily gradually escalates before stabilizing. Thirty years ago, it was likely that more than two-thirds of those who experimented with tobacco became dependent, whereas in today's climate, that proportion seems to be less, around 40%. This shift in the crude addictive potential of nicotine emphasizes the potentially powerful interactions of cultural setting with drug use as a factor in the apparent addictiveness of a particular substance. Nearly all new users, who replace those who die or quit smoking, are kids between the ages of 8 and 18.

Abrupt cessation often produces a withdrawal syndrome that may last from a few days to a few weeks. Symptoms may include difficulty concentrating, irritability, headache, sleep disturbance, and appetite disturbance. Readily observable signs are almost always lacking. A drop in pulse rate is the most easily noticed. As with other drugs that cause addiction, risk of withdrawal seems to be a complex mixture of dose, set and setting.

Clinical course

In the absence of treatment, dependence on nicotine is characterized by repeated attempts to quit, and by relapses. It is best viewed as a chronic disease with highly variable periods of remission and exacerbation. Most who smoke say they want to quit; about two-thirds report they want to quit when asked this question anonymously. Well over 90% indicate that they would quit if there were an easy way to do so. Even among teenagers who smoke, about two-thirds who smoke would prefer that they did not.

Most people who smoke have tried to stop but have quickly relapsed. About 15% of those who make a single serious quit attempt succeed for at least a year. However, with multiple attempts, 60% or more of those who keep trying do remain abstinent.

The medical office environment

The medical office can be readily adapted to support non-smoking and to promote permanent abstinence. In addition to making the practice milieu smoke-free, physicians should consider the following:

1. Provide background literature about the tobacco problem. Besides the usual array of brochures, pamphlets and self-instructional courses readily available from the major voluntary health organizations, include literature about the tobacco industry itself. *The Tobacco and Youth Reporter* from Stop Teenage Addiction to Tobacco (STAT, P.O. Box 60658, Longmeadow, Mass. 01116) reviews the ploys used by the industry to recruit new smokers and reports on innovative efforts to prevent nicotine dependence. Newsletters from activist groups such as Doctors Ought to Care (DOC, HH-101, Medical College of Georgia, Augusta, Ga. 30912) and Americans for Nonsmokers Rights (ANR, 2054 University Ave., Suite 500, Berkeley, Calif. 94704) are a helpful counterpoint to the wide array of tobacco product advertising and promotion to which all of us are subjected such as *Philip Morris Magazine,* which has a circulation of over 5 million (it is distributed free to whomever expresses an interest).
2. Provide current, local information about clean indoor air. Have a list of restaurants and other public facilities which offer smoke-free areas or which are entirely smoke-free available for your patients. The local nonsmokers' rights organization or the State departments of health can supply this information.
3. Challenge the tobacco advertising in waiting room magazines with stickers on the covers or on the ads themselves exposing the hyprocrisy. Ready-made stickers are available from DOC, but they may also be mass-produced on an office copying machine, using mailing labels. Inform the publishers that you are making their tobacco advertising honest.
4. Show anti-tobacco videos. An increasingly attractive selection is available. The author will supply anyone interested with a list.
5. Mark charts of patients who use tobacco, as well as those who have become abstinent within the past year, to flag the need to discuss this problem as a matter of routine.
6. Assign one person in the office to the responsibility for coordinating the tobacco-control activities for the entire office.

How to approach the patient

In an effort to educate physicans on the management of nicotine dependence, the National Cancer Institute has recently advocated a simple model based on four A's: Ask (about tobacco use), Advise (to stop this use), Assist (help set a quit date, offer self-instruction materials, nicotine gum, or other direction) and Arrange (follow-up visits). This bare-bones approach has been shown to improve long-term cessation rates, although physicians can approach this problem on their own in far greater depth and with not a very much greater investment of time. This approach, which recognizes the chronic nature of nicotine addiction, establishes a therapeutic alliance between the physician and the patient over the long haul. It provides the information necessary to develop an initial management plan for that smoker.

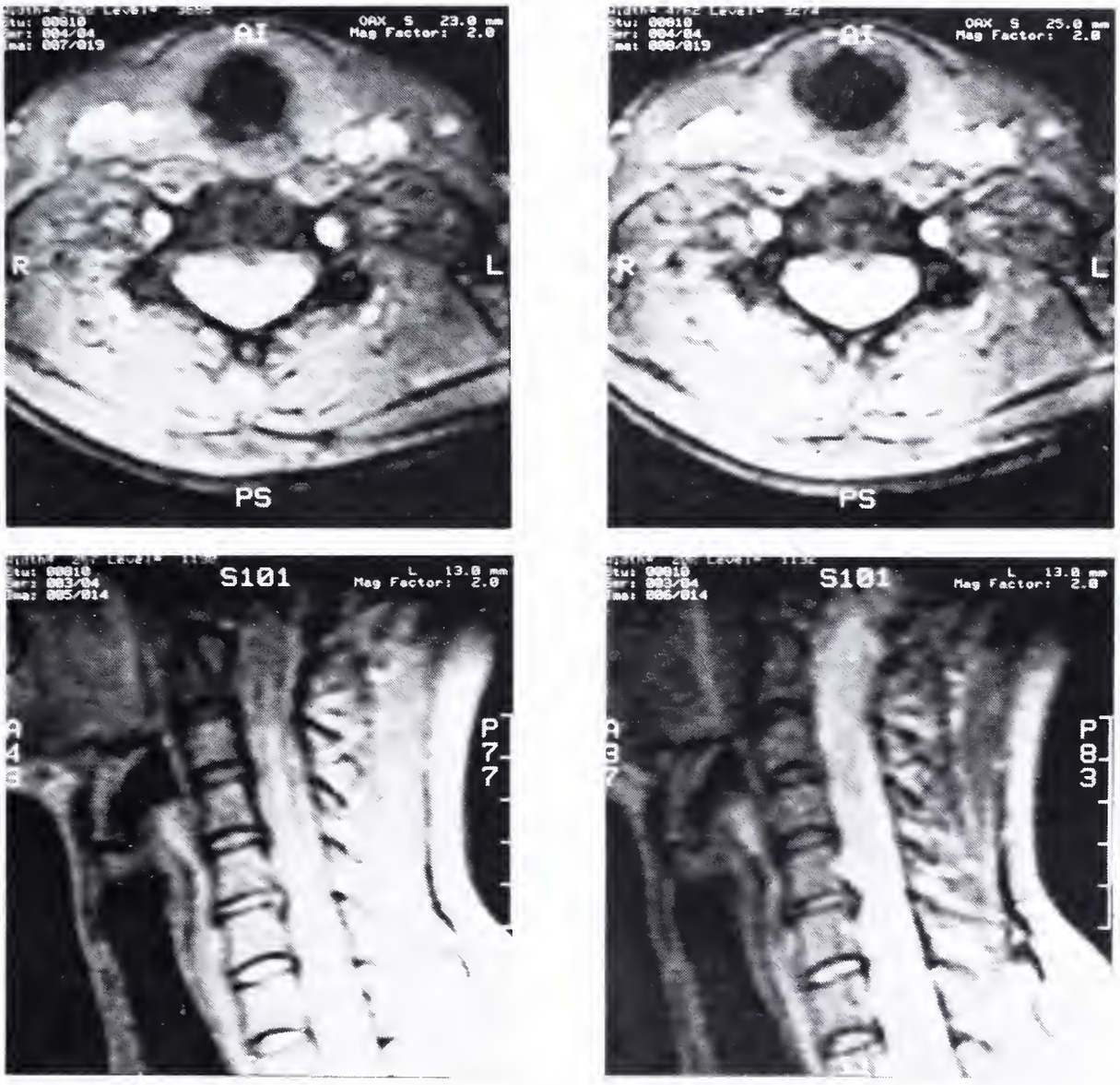
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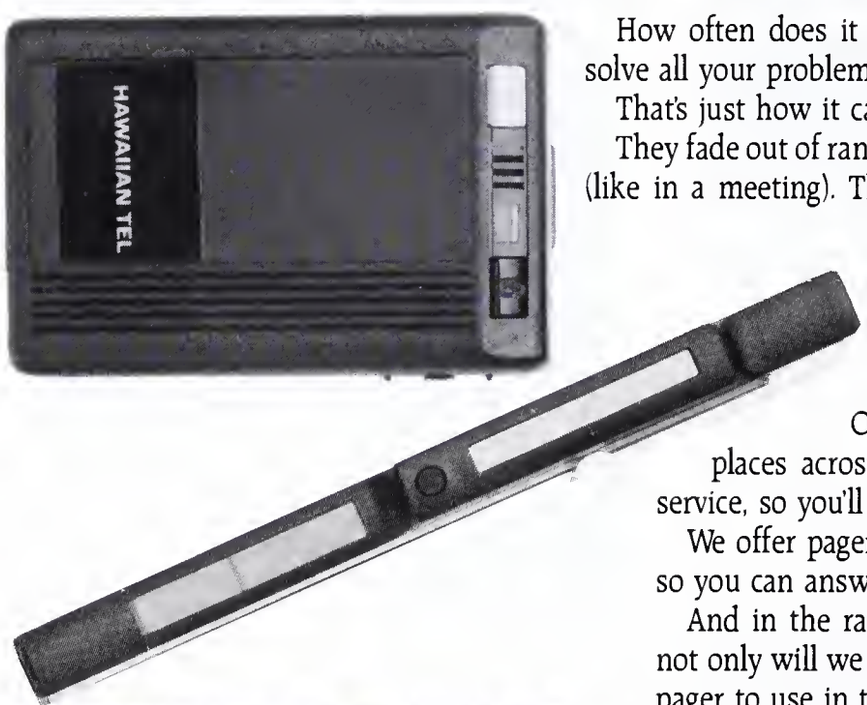
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Beyond the call

First, take a history of tobacco use. Explore the onset and development of smoking or chewing; review past attempts to quit and what may have gone wrong; analyze relapse experiences; explore the patient's current environment at home and at work; ask about the people, places and things that contribute to continued smoking. More important, search for factors that may promote abstinence.

Ask the patient to make a list of (a) all the reasons he or she has for smoking and (b) all the reasons for quitting. Emphasize that these lists should be the patients' own, personal reasons, not the opinions of the family or of others (including the doctor). In subsequent discussions over these individual lists, items can be added or subtracted on the basis of the mutual analysis that develops between doctor and patient. In addition, ask the patient to identify the situations in which abstinence will be most difficult at first, in order that some preparatory work can be done to help the patient avoid smoking in those situations. Such practice is most important for long-term success.

It is helpful to offer self-instruction materials to interested patients. A number of outstanding ones are available, but the one I use is called *Freedom from Smoking for You and Your Family* from the American Lung Association for about $7 per copy. A most useful companion book is: *If Only I Could Quit* by Karen Casey, from Hazelden, also costing about $7. This volume presents 24 personal stories of recovery from nicotine dependence and a set of 90 meditations that patients can use in the initial weeks to months of abstinence.

Consider pharmacologic adjuncts only in the context of a basic program such as the one above. As with chlordiazepoxide or disulfiram for alcoholism, or with methadone for opiate dependence, drugs use for nicotine dependence are only helpful as supports for an ongoing management plan.

Nicotine polacrilix (Nicorette/Lakeside) is approved for use in the management of nicotine dependence, but it is a difficult drug to use. Patients tend not to use enough, and it takes some learning for patients to be able to extract nicotine reliably from each dose. Although package instructions indicate that the drug should be taken when one feels the urge for a cigarette, in practice, patients wait too long, until they feel too uncomfortable, before the slowly released nicotine in the polacrilex does any good. Furthermore, the pH of the mouth strongly influences whether the drug is absorbed at all. Using the drug like chewing gum renders it ineffective because much of the nicotine is then swallowed and metabolized on its first pass through the liver.

In instructing patients on the use of nicotine polacrilex, I use the following guidelines:

1. I reserve the use of the drug for patients who either have had or are at risk of relatively troublesome withdrawal symptoms and who really want this sort of pharmacologic support. While it works relatively well for these problems, nicotine polacrilex does not seem to suppress craving for or thinking about tobacco. This should be emphasized to patients.

2. Patients are asked to take the drug on a regular schedule, for instance, once an hour while awake, initially.

3. Nearly all beverages can lower the pH of the mouth and interfere with nicotine polacrilex absorption. Therefore, the drug should not be used within 15 to 20 minutes after drinking a beverage.

4. The drug should be placed against the buccal mucosa most of the time, "between the cheek and gum," to permit nicotine absorption. It should not be chewed like gum; it should only be moved around occasionally with tongue and teeth to expose a new surface of the wad for implantation.

5. Nicotine polacrilex should not be used interchangably with smoking. This is an abuse of the drug and is not beneficial in helping patients stop smoking.

6. Dependence on nicotine polacrilex can occur and requires specific attention if it develops. I become concerned if use continues at a high level after several months and I intervene if this pattern continues for 6 to 10 months.

A number of promising new drugs are being actively tested for possible use as adjuncts to basic management of nicotine dependence. These include clonidine, nicotine patches and several anti-depressants.

Follow-up

Physicians who are working with patients on their nicotine dependence should develop a consistent follow-up plan for as long as a year after the patient has stopped smoking. The appropriate intensity of such follow-up varies with the individual case, and the content depends on what the patient is doing at the time. For those patients not yet motivated to organize a quit attempt, basic work to develop that motivation should be integrated into the regular schedule of appointments or, if the patient is willing, at specifically arranged sessions.

It is helpful to talk through a patient's quit plan, including a specific quit date and all the things the patient plans to do to improve the chances of a stable abstinence. Relapse should be treated as an opportunity to learn about specific problems that need attention before the next attempt to quit is made.

If others in the home smoke, every effort should be made to recruit them into stopping as well, or at least no longer to smoke in the patient's presence, in order to reduce the risk of relapse and to protect the now non-smoking individual from the other person's tobacco smoke pollution.

How to control the epidemic

The opportunities physicians have for "making a difference" about tobacco are abundant. Obviously, regular, intentional clinical management of nicotine dependence is fundamental. In addition, physicians should assume leadership in making sure that their practice environments, offices, clinics and hospitals, are smoke-free.

Social and political activism by physicians and others will help bring this epidemic ultimately under control. Achieving smoke-free, indoor environments, limiting access to tobacco products by minors, raising the excise tax

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on tobacco products to levels that discourage use by the young, challenging advertising for tobacco products by means of counter ads, and by obtaining federal regulatory control over all new nicotine delivery systems to assure their safety and lack of addiction liability before marketing, are a few of the major areas that may be the focus of activism.

A large number of opportunities for activism exist at the local or community level. Local newspapers that carry tobacco product advertising can be encouraged to drop these ads. Pharmacies that sell these deadly tobacco products can be encouraged to cease doing so as being contrary to professional and health principles. Local "age-of-sale" laws can be tested with the help of young confederates; merchants can thereby be encouraged to check identification of young people who want to purchase cigarettes.

As tobacco use declines in the United States, tobacco companies are expanding their activities abroad. It would be a calamity if a main effect of reducing tobacco-caused mortality and morbidity in this country would be that tobacco products were merely dumped in Third World countries, transferring the burden of illness and death to other peoples. If current trends continue, however, this is exactly what will happen.

As we learn how to control the tobacco epidemic here, we must assist other countries in mounting an effective resistance to this huge public health problem. Unfortunately, the opposite has taken place in our recent history. Over the past 4 years, the federal government has pressured 3 of our Asian trading partners, Japan, Taiwan and South Korea, to accept American cigarette imports. The entry into these markets by American multinational cigarette firms has distorted their local markets. American-style advertising, aggressively aimed at children and at women, is transforming those markets and increasing the rates of cigarette smoking among women and adolescents.

Conclusion

Although there is much hand-wringing in this country about illegal drugs and the need to control drugs at the source, our exports of tobacco lead to more disease and death than do our imports of cocaine, heroin and marijuana. Furthermore, in locales where it is illegal to sell tobacco products to minors, most tobacco sales that lead to addiction are illegal ones.

Nicotine has caused the largest epidemic of disease of the 20th century. It is coming under control in advanced countries, but the prospects for global control are presently dim. Individual physicians have a major role to play in tobacco control through their work with individual patients, through the tone they set in their workplaces, and through activism at local, state, national and international levels. Only in this way can the scourge that now kills 2.5 million human beings in the world each year be controlled. ■

(References are available on request to the author.)



Pain management in the chemically dependent patient

Russell D. Hicks, MD*

The individual who suffers from chemical dependency has unique physiological and psychological conditions that make the management of acute and chronic disabling conditions challenging, frustrating or stressful, depending upon the experience of his primary attending physician. Several general principles are helpful in this situation. Special conditions, such as tolerance to opiate analgesics, and methadone maintenance, require special attention.

The desire to treat the person who has an admitted or suspected history of chemical dependence presents conflicting interests for the attending physician. While there is the desire to provide the best possible care for any patient, this must be balanced against contributing to the patient's primary problem with drugs, and perhaps worse yet, the fear of being used by the patient to provide him with drugs to support his drug habit. The fear of dealing with a patient who is "running a scam" to obtain prescription drugs, or the anxiety of having to deal with an overly zealous DEA agent, further complicates the physician's role in the care of these parties.

Definition of terms

Chemical dependence: This term is now used in the place of "addiction." Chemical dependence is seen as a primary disease with a component of genetic predisposition, characterized by an atypical response following exposure to opiates, stimulants, sedatives, alcohol and other mood-altering drugs. This response is characterized by a tendency toward progressively greater consumption of the chemical and a persistent disposition to relapse to chemical use when abstinence is achieved and physical dependence reversed. An additional adjunctive component is Psychological Dependence.

Physical dependence: This is a predictable, pharmacologic consequence of the chronic administration of opiates, stimulants, sedatives and alcohol. Physical dependence is revealed when an abrupt discontinuation of the drug produces a stereotypical abstinence (or withdrawal) syndrome. It is becoming increasingly evident that ordinary exposure to this group of substances is not sufficient to develop psychological or chemical dependence. Data from returning Vietnam War veterans document that 90% of those who required treatment of an opiate withdrawal syndrome as the result of the use of opiates in Vietnam, did not continue or resume drug or alcohol abuse, or show dependent behavior upon returning to the United States, even over long periods of follow-ups.

There is no doubt that while most people exposed to alcohol and its repeated use will develop tolerance, only 10% become alcoholics. It is not well recognized that although tolerance to opiates and getting a predictable withdrawal syndrome will result, following chronic administration, that the compulsive craving for opiates exists only in less than 10% of individuals so exposed. There are now many reports of the phenomenon of "clippers" (individuals who consume heroin intermittently without becoming physically or psychologically dependent), as an example of this.

Cross-dependence: It is now recognized that individuals who become chemically dependent on any of the chemicals in this mood-altering class, eventually become dependent on many other mood-altering substances with which they may come in contact. Varying degrees of susceptibility exist, making the exact pathophysiological course difficult to predict.

Tolerance: Tolerance is exhibited by the requirement of increased doses necessary to maintain the same physiological response.

Cross-tolerance: Individuals who exhibit chemical dependence on these substances also demonstrate acute cross-tolerance to similar drugs; they also develop tolerance much more rapidly to substances of different pharmacological classes. Thus, individuals who have been alcoholics in the past will initially require larger doses of diazepam than the usual patient. Alcoholics, even after a long period of sobriety, will develop tolerance to opiate analgesics much faster than non-chemically dependent patients. It normally takes 2-3 weeks of regular opiate use

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to develop any signs of tolerance, but this time interval is shortened in alcoholics and in other sedative-dependent individuals.

(This paper will not discuss the management of the patient who is faking an acute or chronic pain syndrome in order to manipulate a physician into administering or prescribing analgesic or mood-altering drugs. The differentiation of the malingering individual from the ordinary patient is the subject of another paper.)

It is estimated that 10%-15% of the population of the United States suffers from chemical dependency. Many of these individuals have maintained abstinence from their primary drug of dependence but have had to take opiates for serious medical problems. These individuals must be managed carefully, so as not to expose them to high doses of opiates unless absolutely necessary. If their medical condition requires large doses, or chronic administration of opiates, as in the treatment of malignancies, then the physician must not be surprised when tolerance and dependency develop. Carefully obtained histories will reveal a past history of alcoholism or opiate addiction and will allow the physician to steer the best possible course, and will alert him to the need for early consultation with a physician knowledgeable in the field of addiction-medicine, chemical dependence and pain management.

General management guidelines

The first task of the physician is to define the pain syndrome and to treat the underlying condition as quickly and efficiently as possible. Although the pathophysiology of pain in many disorders is difficult to clarify, one can distinguish between the pain of somatic or visceral origin and the pain that results from injury to neural tissue (deafferentation pain).

The use of non-steroidal anti-inflammatory agents (NSAIAs) should be considered as first-line therapy in acute and chronic medical conditions with pain, unless contraindicated. NSAIAs should be continued even when they are inadequate as a single agent in controlling the pain. The combination of NSAIAs and opiate analgesics often allow for a reduced dose of opiates and thus provides less opportunity for development of tolerance or dependence. The use of other modalities, such as physical therapy, transcutaneous electrical nerve stimulation (TENS), or tricyclic antidepressants, should be considered early in the course of pain management.

The idea of giving opiate drugs to any patient with chronic, non-malignancy pain has been rejected by many physicians, although other physicians have seen patients return to a functional lifestyle under the responsible use of small daily doses of opiate analgesics. There is general agreement that a substance-abuse history should be viewed as a relative contraindication to opiate therapy. Opiate therapy, especially maintenance therapy, should be considered only after all other reasonable attempts at analgesia have failed.

The physician who accepts the responsibility for the outpatient treatment of a patient with chronic, non-malignancy pain, must set explicit limits before he prescribes the first dose of opiate analgesics. This is especially important in the patient with a history of chemical dependency. *Patients must be informed that only one physician is responsible for the prescription of all opiate analgesics.* This principle must be strictly enforced.

The patient must understand that the complete relief of chronic pain is unrealistic. The goal of reducing the pain to a level that allows for reasonable activity and mental concentration, should be explained to the patient. The inappropriateness of excessive sedation that leads to mental clouding should also be explained; arrangements should be made with a family member to monitor the patient and report such side effects in a timely manner.

The patient should not be allowed to negotiate with the physician for specific drugs or the amount and frequency of doses. However, the physician must keep an open line of communication with the patient so that he feels comfortable in sharing his concern and anxiety over the severity or continuance of the pain. It is inappropriate for the patient to dictate an analgesic regimen, just as it would be inappropriate for the patient to dictate an antibiotic or insulin regimen. Feedback must be actively sought by the physician, so that he will be able to alter appropriately by the management of the underlying disease process, just as he would manage an infectious disease or diabetes mellitus.

Any indication that the drug is being abused must be managed in a direct and forthright manner. More frequent appointments should not be made and lost or stolen prescriptions should not be replaced, unless the physician can be positively assured that the patient did not take extra doses of medication. Diversion of drugs to others can occur, but is uncommon in patients who have been properly evaluated to be certain that they have a legitimate need for opiate analgesics. However, on rare occasions a patient will sell opiate analgesics or sedative-hypnotics in order to obtain heroin or cocaine.

A significant number of patients who are referred to pain clinics have developed a pattern of using emergency rooms to manage their pain. This should be discouraged, since this results in dependence on parenteral drugs to control pain. The Saint Francis Pain Treatment Center (SFPTC) has treated a large number of patients over the past 15 years and it never saw the need even to maintain patients with the most severe non-malignancy pain on parenteral opiate analgesics.

The physician must recognize that stress from any source whatever will result in an increased sensitivity to pain. Thus, time must be provided for these patients to discuss the reasons for their stresses and circumstantial pressures. The physician must empathize with these concerns and provide either an outlet for feelings or make arrangements for other health professionals to be part of the team in assisting the patient to adapt to his disability. However, a referral to a psychiatrist or a psychologist must be handled delicately. The patient must understand that the physician knows the patient has an organic pain, but that talking with someone about the specific concern will be helpful in the adjustment to his chronic medical problem. Formal, individual or group therapy is extreme-

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ly helpful in assisting patients in the management of the psychological aspect directly or indirectly related to the chronic pain.

Patients often want to take sufficient amounts of analgesics so as to overwhelm the pain in order that they can engage in "normal" activities despite significant physical disabilities. A common clinical situation is a man in his early 30s with chronic low back pain secondary to a failed, back-surgery syndrome in which further surgery is contraindicated. Such a patient often harbors a great deal of hostility toward and distrust of physicians since "he was promised a complete cure," or assumed he had been. Such persons have derived most of their self-image from their previous physical abilities and thus have difficulty accepting themselves as less than physically perfect. The inability to participate in sports and the restriction on sexual activity can be devastating. Although patients must try to accept their disability, it is not inappropriate for the physician to offer realistic hope that some new procedure or new drug will be available in the future, that might reduce or alleviate their disability.

Patients referred to pain clinics are often found to have conditions other than the one causing the pain problem conditions that have been masked by or even caused by the pain medication. Therefore, it is useful occasionally to have another physician consult on the chronic, non-malignancy pain cases, as another diagnostic procedure may be indicated. A secondary diagnosis of a major depression is not unusual to complicate matters; a response to tricyclic antidepressants can be quite dramatic.

The prevention of tolerance should always be a goal. Experience at the SFPTC has documented that if patients are maintained at less than 5 tablets of any of the opiate analgesics in a 24-hour period, there is only a slight chance of tolerance developing. This is based on the pharmacologic activity of the opiate analgesics, most of which have half-lives of 3-4 hours. Thus, 4 tablets a day, taken as needed, necessitates that the patient has a period of low blood levels for at least 6 hours per day. Clinical experience over the past 15 years has substantiated the limitation of 4 tablets per day as a realistic goal. The majority of patients receive adequate pain relief, without the development of tolerance, under this limitation on the use of opiate analgesics. Experience in this clinic also substantiates the fact that patients who are taking more than 5 tablets per day, suffer substantial withdrawal symptoms on a daily basis. These symptoms not only cause discomfort in themselves but are associated with a lowered pain threshold making the patient more uncomfortable. The additional stresses of withdrawal symptoms, mental confusion and a lowered pain threshold combine to result in an extremely unstable situation.

Many patients who are referred to pain clinics, have both tolerance and physical dependence. The patient without chronic pain who is physically dependent on opiates should be referred to an appropriate drug-treatment program. The patient with real chronic pain, however, is not eligible for most drug-treatment programs, since immediate discontinuation of all mood-altering substances is a requirement for admission to such programs.

The practical regimen developed in the SFPTC includes a comprehensive evaluation, including a review of all medical records, a medical history and physical examination, a psychiatric evaluation, and evaluation by the social services, physical therapists and others. An individualized treatment plan is then outlined, after a conference including all members of the team. This plan includes a detailed management regimen for opiate analgesics.

The individual patient's plan usually specifies a gradual reduction in opiate analgesics to the level of fewer than 5 tablets per day. The patients are usually seen on a weekly basis during the early part of therapy, since many of them are unable to control the specified use of opiates for longer than 7 days at a time, even when they are receiving intensive psychosocial support and the doses are strictly monitored. Considerable variability in the length of the dosage reduction phase exists, therefore. Many patients are unable to tolerate more than a reduction of 2 tablets per 7 days, whereas a reduction of one-half to 1 tablet per day was accomplished by most patients. On rare occasions, patients require admission to the hospital for reduction of their medications.

Specific management guidelines

Patients who have a history of opiate dependence may exhibit some tolerance right away when being treated for acute pain, but almost universally they develop tolerance within 2-3 days even when the customary doses of opiate analgesics are given. Patients who are opiate-dependent on either prescription drugs or heroin often present with medical conditions in an advanced state of progression because the increased pain threshold secondary to their chronic use of opiates has masked warning symptoms. These patients will require larger starting and maintenance doses of opiates than do opiate-naive patients.

Patients who present with an active opiate dependence should not have the drug withdrawn during an acute medical illness, nor should the physician attempt to decrease a maintenance dose of methadone. Small doses of methadone may be used to control signs and symptoms of withdrawal and can be legally administered in a hospital for treatment of opiate withdrawal. Methadone cannot be used to control opiate dependence or withdrawal in an outpatient setting unless the physician has a special DEA license for a methadone maintenance program.

Patients in an active methadone maintenance program must be maintained on their daily methadone dose while hospitalized for medical or psychiatric problems. If the patient is unable to take oral medications, then the methadone can be administered parenterally. The parenteral dose is 50% of the oral dose. If the pain is chronic, then the dose of methadone may be increased by 10%-20% in order to control the pain. The physician must remember that methadone has a long half-life (approximately 12 hours) and thus it takes 3-4 days for a stable blood level to become established. Doses of methadone should not be increased more often than every 4-5 days. If the pain is not controlled by the methadone, shorter-acting opiates such as morphine should be used.

One of the properties of methadone is that it blunts the

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effect of other opiates; therefore the patient will require larger doses of opiates. The general rule of thumb is to give about 1.5 times the dose that would be given to an opiate-naive patient with a similar medical problem. Permission should be obtained in order to exchange complete medical and social information with the patient's methadone maintenance clinic. The physician at the clinic can be helpful in providing further medical and psychological information as well as in coordinating the reinstituting of methadone at the appropriate dose.

Opiates of the mixed agonist-antagonist class, such as pentazocine, butorphanol, buprenorphine, etc., are not appropriate for use in this group of patients. If the patient is currently opiate-dependent, these drugs will precipitate an acute withdrawal syndrome, with the resultant exacerbation of the painful condition. Their use in helping to differentiate between "organic" and "functional" pain is also inappropriate.

Conclusion

The management of acute and chronic pain in patients with a history of chemical dependency is both challenging and stressful. Patients are reluctant to give accurate histories because physicians tend to withhold opiate analgesics for the patient with a history of drug-abuse. Whereas physicians must be on the alert for drug-seeking behavior, they should not penalize patients with serious medical problems who also suffer from the disease of chemical dependency. Treatment of patients, especially those who are chemically dependent, suffering from chronic non-malignancy pain, should be undertaken by physicians experienced in drug-abuse disorders and pain management. Physicians must balance professional accountability against limit setting, keeping in mind that their primary objective is to provide a scientific and humane approach to chronic pain-management. Pain clinics are an important resource because patients with chronic pain require comprehensive services to minimize the use of opiate analgesics. ■

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Action: Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalmic centers and release of posterior pituitary hormone.

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it; however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

Indications: Yocon® is indicated as a sympathicolytic and mydriatric. It may have activity as an aphrodisiac.

Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.[1,2] Also dizziness, headache, skin flushing reported when used orally.[1,3]

Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.[1,3,4] 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to ½ tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.[3]

How Supplied: Oral tablets of Yocon® 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.



References:

1. A. Morales et al., New England Journal of Medicine: 1221. November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

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Lecture Notes

HENRY YOKOYAMA, MD

"Update on the Pharmacology of Asthma" by Visiting Professor Leslie Hendeles, PharmD, June 30, 1989.

Classification of asthma by clinical patterns

1. Intermittent
2. Seasonal
3. Chronic

Pharmacology of medications fall into five categories

1. Sympathomimetic agents with Beta Adrenergic effects
2. Theophylline
3. Cromolyn Sodium
4. Corticosteroids
5. Anticholinergics

Goals of asthma therapy

1. Prevent ER visits and hospitalizations
2. Eliminate symptoms that interfere with sleep or other activities
3. Return patient to normal lifestyle, including participation in vigorous exercise

Intermittent asthma

1. Provide prompt and effective relief of symptoms after they develop
2. Drugs used "as needed" basis

Chronic asthma

1. Prevent symptoms with prophylactic regimen administered continuously via around-the-clock stabilization

I. Sympathomimetics: Effect depends on which receptors are stimulated: a. vasoconstriction (alpha receptors) b. cardiac stimulation (B1 receptors) c. bronchodilation, skeletal muscle tremors and hyperglycemia (B2 receptor) and hypokalemia.

1. New agents:
 Terbutaline, Albuterol, Bitolterol
 Increased B2 receptor selectivity and fewer side effects; longer lasting effects; and fewer side effects; greater bioavailability
2. Routes of administration:
 a) Inhalation: Most rapid means of relief with fewer side effects; MDIs (metered dose inhalers) are better than nebulized solutions, i.e. convenient for ambulatory patients; can be used before vigorous exercise to prevent exercise-induced bronchospasm . . . Nebulized solution: Effective in patients with severe obstruction who failed with MDIs and infants and young children.
 b) SQ injection: Less preferred than inhaled route and no more effective . . .

A. B2 selective agonists: Less potent bronchodilators when given orally than when inhaled.
 1. Oral: 1-2 hrs. to reach peak effect . . . limited value in acute symptoms
 2. Do not prevent exercise-induced bronchospasm
 3. Tremors in 30% of patients
 4. q 4-6 hrs. for around-the-clock bronchodilators: Therefore, slow release formulation
 5. Less effective in chronic asthma than slow release theophylline or cromolyn

B. Epinephrine: Stimulates alpha, beta and B2 receptors; non-prescription MDI and bronchodilator effect dissipates in 15'' to 20''; nebulized solution; SQ epinephrine only when bronchospasm 2° anaphylaxis; inhaled B2 selective agonist more effective than SQ epinephrine. . . .

C. Isoproterenol and Isoetharine: Stimulate BI and B2 receptors; short duration of action; not orally bioavailable; available as MDIs and nebulizers; significant cardiac stimulation (avoid in pts. with arrhythmia or CAD)

D. Metaproterenol: Available as tablets, syrup, MDIs and nebulizers; inhaled metaproterenol less potent than albuterol, i.e., 4 puffs equals 2 puffs of albuterol; increased cardiac stimulation

E. Albuterol: Potent B2 selective agonist more potent than metaproterenol . . . available as MDIs, tablets, syrup, nebulizer, slow-release tab; peak intensity greater with two inhalations; duration — too short for continuous prophylaxis of chronic asthma

F. Terbutaline: B2 selective agonist; available as tabs, SQ, MDIs; less potent than albuterol — 3 puffs vs. 2 puffs albuterol; longer duration of action — prophylaxis in chronic asthma; greater skeletal muscle tremors; use SQ in severely dyspneic patient

G. Bitolterol: MDIs; less potent than albuterol, but longer duration of action; 3 puffs equivalent to 2 puffs albuterol. . . .

II. Theophylline
 1. Methyl xanthine resembling caffeine
 2. Mechanism of action unknown
 3. Long-term prophylaxis (at serum concentration of 10-20 micro-g mL range); over 20 micro-g side effects, e.g., nervousness, insomnia, nausea and vomiting, diarrhea, HA; over 40 micro-g mL — arrhythmias, seizures, death

A. Intermittent athma
 1. Theophylline has limited use
 2. Less potent than SQ or inhaled sympathomimetics
 3. Transient caffeine-like side effects
 4. No benefit over hourly administered nebulizer B2 agonist, i.e., little use in acute hospital except when no response to albuterol nebulizer

B. Chronic asthma
 1. Theophylline more effective than cromolyn, inhaled albuterol or oral metaproterenol
 2. Addition of theophylline effective in corticosteroid dependent patients
 3. Theophylline metabolism slowed by medical conditions such as CHF, liver dysfunction, COPD, viral infections and prolonged fever

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4. Theophylline metabolism increased in children, cigarette or marijuana smoking, or patients on phenytoin, carbemazepine or phenobarbital
5. Slow release formulation: Longer dosing intervals with less fluctuation in serum concentration; available in 29 brand names and generics — variable, so write "DO NOT SUBSTITUTE" on prescription; food can cause dumping with Theo 24, but has no effect on Slo-bid or Theo Dur; titrate slowly to avoid transient side effects

III. Cromolyn
1. No bronchodilator or anti-inflammatory activity
2. Effective only as prophylactic agent
3. Blocks release of asthmogenic mediators by altering membrane permeability to calcium
4. Available as inhaled powder, nebulizer and MDIs
5. More expensive and less convenient than slow release theophylline
6. Use in patients who cannot tolerate theophylline and with peptic ulcer, gastroesophageal reflux, migraine HAs or seizure disorders

IV. Corticosteroids
1. Mechanism of action unknown
2. Most important effect:
 a) Restores B adrenergic responsiveness
 b) Suppresses inflammation (by decreasing leukotriene formation)
 c) Prevents and reverses late phase allergic reaction and subsequent increased airway hyperactivity and reduced mucus secretion
3. Corticosteroids reverse asthma unresponsive to bronchodilators (due to inflammation and increased edema and excess bronchial secretions)

A. Short-term steroid therapy
1. Short courses reduce duration and severity of severe exacerbations
2. Very early use prevents hospitalization
3. Withholding steroids is the major factor in asthma deaths
4. Oral or parenteral steroids for less than 2 wks. have little risk or serious toxicity
5. Long-term corticosteroid therapy if symptoms become unresponsive to bronchodilators; alternate morning doses of prednisone or inhaled glucocorticoids, e.g. beclomethasone, flunisolide, triamcinolone

B. Long-term steroid therapy
1. Initial dose
 a) 30-40 mg prednisone on alternate mornings for adolescents and adults
 b) Beclomethasone — 600-800 micro-g/d in 2-4 divided doses
2. Once control achieved for 1 month, the lowest amount can be determined by cautious decrease in dose at 5 micro-g prednisone or 50 micro-g (beclomethasone) at 2-wk. intervals . . .
3. The three corticosteroids used in asthma therapy via Flunisolide bid; Bechomethasone bid or Triamcinolone MDI have no advantage over each other.
4. Patients with chronic symptoms while on oral B agonists or theophylline continuously will improve in their pulmonary function and decreased airway hyperactivity with steroids; more so than with cromolyn or inhaled B agonists.

V. Anticholinergics
1. Ipratropium MDI: Bronchodilation by inhibiting vagally-medicated bronchoconstriction
2. Does not block bronchospasms caused by antigen or exercise — no benefit in chronic asthma prophylaxis
3. Some benefit in children with acute asthma who do not respond to inhaled B2 selective agonists

Drug Selection

A. Acute symptoms
1. Inhaled sympathomimetic, e.g. terbutaline or albuterol . . .
2. If too dyspneic to inhale, inject terbutaline combined with nebulizer . . .
3. Corticosteroid therapy within 1-2 hrs. if symptoms of active asthma persist . . .

NOTE: Ambulatory patients—
1. If too young to use MDI, portable air compressor for home use to nebulize B2 selective agonist
2. Albuterol syrup if MDI with spacer device fails
3. Inhaler should not exceed 4 times in 24 hrs. . . . Deaths a/c xs use of inhaler . . . Write "NO REFILL" on prescriptions. A canister should last 3-4 weeks . . .
4. Give short course or oral prednisone when acute symptoms do not respond to potent inhaled B2 selective agonist. Continue until patient is symptom-free for 24 hrs. Do not exceed 7 days of therapy . . .

B Chronic symptoms
1. Theophylline in doses of therapeutic serum concentrations around-the-clock is the most effective non-steroid therapy . . .
2. Cromolyn as alternative . . .
3. Inhaled albuterol or terbutaline can be used as prophylaxis, but both are less effective and convenient than slow release theophylline bid
4. Chronic asthma patients inhaled B2 selective agents for "as needed" treatment for acute symptoms and for preventing exercise-induced asthma. ■

Reader's Express Their Views

"Ask not what your country can do for you . . . If you are between the ages of 20 and 44, you may be just what your (indebted) Uncle Sam is looking for. The "doctors draft law" was allowed to expire in 1973, and subsequently the military has been relying on voluntary enlistment. Alas, physicians, nurses and technicians have not been willing to sign up in recent years, and the military is running short of medical people. Therefore, the Selective Service is developing a new military draft plan designed to ensure that the Defense Department has sufficient available personnel. It is not fair, of course, just as the old law was flagrant occupational discrimination, yet medical people have historically been willing to serve when called upon. As an old USMC ground pounder, I was surprised to find myself eligible for service once again, upon completion of my medical education. The young folks say, what goes around, comes around, so the present generation may become vulnerable to the same congressional planning that brought fame and fortune to Alan Alda.

Ignorance is a voluntary misfortune. What is an optometrist? If you cannot define the word, do not be too perplexed, because the American Optometric Association doesn't know the definition either. With a remarkable bit of meretricious logic, the AOA officially stated: "Doctors of optometry are primary health-care providers who diagnose, manage and treat conditions and diseases of the human eye and visual system *as regulated by state law.*" With that sort of hare-brained description, an optometrist will not know what he knows when he crosses the state line. Yet perhaps that is precisely what the hierarchy of optometry wishes — a plastic legal definition rather than a scientific one. It would likely be much easier to defend in the event of a challenge or misadventure.

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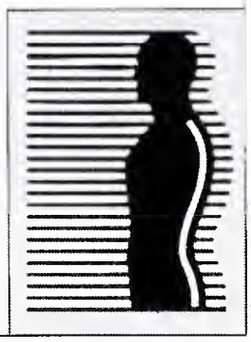
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READERS EXPRESS THEIR VIEWS *(Continued from page 499)*

The man who contributes the least complains the most. Are you a member of the AMA? A recent survey addressed to laymen, found that 87% consider it very important that their personal physician belong to the AMA. Seventy percent of Academy members are also members of the AMA, but *less than 50% belong to AMPAC or OPHTHPAC.*

If you have a difficult task, give it to a lazy man, he will find an easier way to do it. When you are hungry and unable to get out, you can call Domino's and have pizza delivered to your door. If you are romantic and living in Decatur, Ill., you can phone "Captain Condom" (this is not a fairy tale), and the captain, an educator for Planned Parenthood, will deliver state-supplied, spermicide-coated, extra-strength condoms. The program is called "Condomania '89: Real People Do Use Condoms." I don't think my mother would approve.

At any particular time, there are more horse's asses in the world than horses. Truly frightening, the schemes our politicians dream up when acting for "the public good." In California, a bill before the Senate Judiciary Committee, would allow investigators for the Board of Medical Quality Assurance (BMOA) to use wiretap equipment or hidden transmitters to record confidential conversations in a physician's office, *without obtaining court authorization.* Hello there, Big Brother.

Kind words will never die. Neither will they buy groceries. The federal government estimates that by the year 2000, there will be a shortage of 200,000 degree nurses. Furthermore, at the present time less than half graduating RNs receive financial aid. Many are in debt after their educational experience, and the American Association of Colleges of Nursing claims the typical baccalaureate nurse owes $13,000 when launching into the world of medicine. Given their relatively low salaries, slow advancement, heavy duties, and vital obligations, one can easily see why the shortage is not getting better. Organized medicine should turn its efforts to assisting with the education and promotion of nurses, as individuals and as a profession, and forget about the RCT program.

Money is honey, my little sonny. The financial birds of prey are circling overhead. *The Wall Street Journal* ran an item about myopia and the excimer laser, and about the three major manufacturers that are competing vigorously to get their goods into the marketplace. All three companies enjoyed immediate increase in stock values, and that is likely to be a mere beginning. When it impacts the full media spectrum, *Barbara Walters, Time, Newsweek, Modern Maturity, Larry King,* the *Advertiser, et al.,* the stock speculators will appear like a flock of starlings at harvest time.

Never try to pacify someone at the height of his rage. Sight I would love to have seen — Congressman Dan Rostenkowski being pursued down a street by an angry group of senior citizens. He refused to talk with them about the catastrophic insurance bill. The congressman had to sprint to escape the mob! Hell hath no fury like Grandma with a pain in the purse.

A task well done, how sweet it is. Let us all give an appreciative pat on the back to our secretary-treasurer John Drouilhet, for his inspired work and dedication. Alone and on his own time, he organized the September 9 education program presented at Mabel Smyth, to bring general ophthalmology to interested health personnel. This is the kind of effort the HOS should provide in the community to keep an appropriate profile within the body of medicine. GOOD WORK, and thank you, John.

And finally — questions you should never ask . . .

Where did you lose it?
Have I kept you waiting?
You asleep?
Will you promise not to be mad if I tell you something?
You don't remember me, do you?
Is it in?

Aloha and keep the faith.

Russell T. Stodd, MD
from The Weathervane
Vol. 6, No. 7, September 1989

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VASOTEC®

(ENALAPRIL MALEATE | MSD)

VASOTEC is available in 2.5-mg, 5-mg, 10-mg, and 20-mg tablet strengths.

Contraindications: VASOTEC® (Enalapril Maleate, MSD) is contraindicated in patients who are hypersensitive to this product and in patients with a history of angioedema related to previous treatment with an ACE inhibitor.

Warnings: *Angioedema.* Angioedema of the face, extremities, lips, tongue, glottis, and/or larynx has been reported in patients treated with ACE inhibitors, including VASOTEC. In such cases, VASOTEC should be promptly discontinued and the patient carefully observed until the swelling disappears. In instances where swelling has been confined to the face and lips, the condition has generally resolved without treatment, although antihistamines have been useful in relieving symptoms. Angioedema associated with laryngeal edema may be fatal. **Where there is involvement of the tongue, glottis, or larynx likely to cause airway obstruction, appropriate therapy, e.g., subcutaneous epinephrine solution 1:1000 (0.3 mL to 0.5 mL), should be promptly administered.** (See ADVERSE REACTIONS.)

Hypotension: Excessive hypotension is rare in uncomplicated hypertensive patients treated with VASOTEC alone. Heart failure patients given VASOTEC commonly have some reduction in blood pressure, especially with the first dose, but discontinuation of therapy for continuing symptomatic hypotension usually is not necessary when dosing instructions are followed; caution should be observed when initiating therapy (See DOSAGE AND ADMINISTRATION.) Patients at risk for excessive hypotension, sometimes associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death, include those with the following conditions or characteristics: heart failure, hyponatremia, high-dose diuretic therapy, recent intensive diuresis or increase in diuretic dose, renal dialysis, or severe volume and/or salt depletion of any etiology. It may be advisable to eliminate the diuretic (except in heart failure patients), reduce the diuretic dose, or increase salt intake cautiously before initiating therapy with VASOTEC in patients at risk for excessive hypotension who are able to tolerate such adjustments. (See PRECAUTIONS, *Drug Interactions* and ADVERSE REACTIONS.) In patients at risk for excessive hypotension, therapy should be started under very close medical supervision and such patients should be followed closely for the first two weeks of treatment and whenever the dose of enalapril and/or diuretic is increased. Similar considerations may apply to patients with ischemic heart disease or cardiovascular disease in whom an excessive fall in blood pressure could result in a myocardial infarction or cerebrovascular accident. If excessive hypotension occurs, the patient should be placed in supine position and, if necessary, receive an intravenous infusion of normal saline. A transient hypotensive response is not a contraindication to further doses of VASOTEC, which usually can be given without difficulty once the blood pressure has stabilized. If symptomatic hypotension develops, a dose reduction or discontinuation of VASOTEC or concomitant diuretic may be necessary.

Neutropenia/Agranulocytosis. Another ACE inhibitor, captopril, has been shown to cause agranulocytosis and bone marrow depression, rarely in uncomplicated patients but more frequently in patients with renal impairment, especially if they also have a collagen vascular disease. Available data from clinical trials of enalapril are insufficient to show that enalapril does not cause agranulocytosis at similar rates. Foreign marketing experience has revealed several cases of neutropenia or agranulocytosis in which a causal relationship to enalapril cannot be excluded. Periodic monitoring of white blood cell counts in patients with collagen vascular disease and renal disease should be considered.

Precautions: *General. Impaired Renal Function:* As a consequence of inhibiting the renin-angiotensin-aldosterone system, changes in renal function may be anticipated in susceptible individuals. In patients with severe heart failure whose renal function may depend on the activity of the renin-angiotensin-aldosterone system, treatment with ACE inhibitors, including VASOTEC, may be associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death.

In clinical studies in hypertensive patients with unilateral or bilateral renal artery stenosis, increases in blood urea nitrogen and serum creatinine were observed in 20% of patients. These increases were almost always reversible upon discontinuation of enalapril and/or diuretic therapy. In such patients, renal function should be monitored during the first few weeks of therapy.

Some patients with hypertension or heart failure with no apparent preexisting renal vascular disease have developed increases in blood urea and serum creatinine, usually minor and transient, especially when VASOTEC has been given concomitantly with a diuretic. This is more likely to occur in patients with preexisting renal impairment. Dosage reduction and/or discontinuation of the diuretic and/or VASOTEC may be required.

Evaluation of patients with hypertension or heart failure should always include assessment of renal function. (See DOSAGE AND ADMINISTRATION.)

Hyperkalemia. Elevated serum potassium (> 5.7 mEq/L) was observed in approximately 1% of hypertensive patients in clinical trials. In most cases these were isolated values which resolved despite continued therapy. Hyperkalemia was a cause of discontinuation of therapy in 0.28% of hypertensive patients. In clinical trials in heart failure, hyperkalemia was observed in 3.8% of patients, but was not a cause for discontinuation.

Risk factors for the development of hyperkalemia include renal insufficiency, diabetes mellitus, and the concomitant use of potassium-sparing diuretics, potassium supplements, and/or potassium-containing salt substitutes, which should be used cautiously, if at all, with VASOTEC. (See *Drug Interactions.*)

Surgery/Anesthesia: In patients undergoing major surgery or during anesthesia with agents that produce hypotension, enalapril may block angiotensin II formation secondary to compensatory renin release. If hypotension occurs and is considered to be due to this mechanism, it can be corrected by volume expansion.

Information for Patients.

Angioedema. Angioedema, including laryngeal edema, may occur especially following the first dose of enalapril. Patients should be so advised and told to report immediately any signs or symptoms suggesting angioedema (swelling of face, extremities, eyes, lips, tongue, difficulty in swallowing or breathing) and to take no more drug until they have consulted with the prescribing physician.

Hypotension: Patients should be cautioned to report lightheadedness especially during the first few days of therapy. If actual syncope occurs, the patients should be told to discontinue the drug until they have consulted with the prescribing physician.

All patients should be cautioned that excessive perspiration and dehydration may lead to an excessive fall in blood pressure because of reduction in fluid volume. Other causes of volume depletion such as vomiting or diarrhea may also lead to a fall in blood pressure; patients should be advised to consult with the physician.

Hyperkalemia: Patients should be told not to use salt substitutes containing potassium without consulting their physician.

Neutropenia. Patients should be told to report promptly any indication of infection (e.g., sore throat, fever) which may be a sign of neutropenia.

NOTE: As with many other drugs, certain advice to patients being treated with enalapril is warranted. This information is intended to aid in the safe and effective use of this medication. It is not a disclosure of all possible adverse or intended effects.

Drug Interactions:

Hypotension, Patients on Diuretic Therapy: Patients on diuretics and especially those in whom diuretic therapy was recently instituted may occasionally experience an excessive reduction of blood pressure after initiation of therapy with enalapril. The possibility of hypotensive effects with enalapril can be minimized by either discontinuing the diuretic or increasing the salt intake prior to initiation of treatment with enalapril. If it is necessary to continue the diuretic, provide close medical supervision after the initial dose for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and DOSAGE AND ADMINISTRATION.)

Agents Causing Renin Release: The antihypertensive effect of VASOTEC is augmented by antihypertensive agents that cause renin release (e.g., diuretics).

Other Cardiovascular Agents: VASOTEC has been used concomitantly with beta-adrenergic-blocking agents, methyldopa, nitrates, calcium-blocking agents, hydralazine, prazosin, and digoxin without evidence of clinically significant adverse interactions.

Agents Increasing Serum Potassium: VASOTEC attenuates potassium loss caused by thiazide-type diuretics. Potassium-sparing diuretics (e.g., spironolactone, triamterene, or amiloride), potassium supplements, or potassium-containing salt substitutes may lead to significant increases in serum potassium. Therefore, if concomitant use of these agents is indicated because of demonstrated hypokalemia, they should be used with caution and with frequent monitoring of serum potassium. Potassium-sparing agents should generally not be used in patients with heart failure receiving VASOTEC.

Lithium. A few cases of lithium toxicity have been reported in patients receiving concomitant VASOTEC and lithium and were reversible upon discontinuation of both drugs. Although a causal relationship has not been established, it is recommended that caution be exercised when lithium is used concomitantly with VASOTEC and serum lithium levels should be monitored frequently.

Pregnancy—Category C: There was no fetotoxicity or teratogenicity in rats treated with up to 200 mg/kg/day of enalapril (333 times the maximum human dose). Fetotoxicity, expressed as a decrease in average fetal weight, occurred in rats given 1200 mg/kg/day of enalapril but did not occur when these animals were supplemented with saline. Enalapril was not teratogenic in rabbits. However, maternal and fetal toxicity occurred in some rabbits at doses of 1 mg/kg/day or more. Saline supplementation prevented the maternal and fetal toxicity seen at doses of 3 and 10 mg/kg/day, but not at 30 mg/kg/day (50 times the maximum human dose).

Radioactivity was found to cross the placenta following administration of labeled enalapril to pregnant hamsters.

There are no adequate and well-controlled studies of enalapril in pregnant women. However, data are available that show enalapril crosses the human placenta. Because the risk of fetal toxicity with the use of ACE inhibitors has not been clearly defined, VASOTEC® (Enalapril Maleate, MSD) should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Postmarketing experience with all ACE inhibitors thus far suggests the following with regard to pregnancy outcome. Inadvertent exposure limited to the first trimester of pregnancy has not been reported to affect fetal outcome adversely. Fetal exposure during the second and third trimesters of pregnancy has been associated with fetal and neonatal morbidity and mortality.

When ACE inhibitors are used during the later stages of pregnancy, there have been reports of hypotension and decreased renal perfusion in the newborn. Oligohydramnios in the mother has also been reported, presumably representing decreased renal function in the fetus. Infants exposed *in utero* to ACE inhibitors should be closely observed for hypotension, oliguria, and hyperkalemia. If oliguria occurs, attention should be directed toward support of blood pressure and renal perfusion with the administration of fluids and pressors as appropriate. Problems associated with prematurity such as patent ductus arteriosus have occurred in association with maternal use of ACE inhibitors, but it is not clear whether they are related to ACE inhibition, maternal hypertension, or the underlying prematurity.

Nursing Mothers: Milk in lactating rats contains radioactivity following administration of ^{14}C enalapril maleate. It is not known whether this drug is secreted in human milk. Because many drugs are secreted in human milk, caution should be exercised when VASOTEC is given to a nursing mother.

Pediatric Use: Safety and effectiveness in children have not been established.

Adverse Reactions: VASOTEC has been evaluated for safety in more than 10,000 patients, including over 1000 patients treated for one year or more. VASOTEC has been found to be generally well tolerated in controlled clinical trials involving 2987 patients.

HYPERTENSION: The most frequent clinical adverse experiences in controlled trials were: headache (5.2%), dizziness (4.3%), and fatigue (3%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in controlled clinical trials were: diarrhea (1.4%), nausea (1.4%), rash (1.4%), cough (1.3%), orthostatic effects (1.2%), and asthenia (1.1%).

HEART FAILURE: The most frequent clinical adverse experiences in both controlled and uncontrolled trials were: dizziness (7.9%), hypotension (6.7%), orthostatic effects (2.2%), syncope (2.2%), cough (2.2%), chest pain (2.1%), and diarrhea (2.1%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in both controlled and uncontrolled clinical trials were: fatigue (1.8%), headache (1.8%), abdominal pain (1.6%), asthenia (1.6%), orthostatic hypotension (1.6%), vertigo (1.6%), angina pectoris (1.5%), nausea (1.3%), vomiting (1.3%), bronchitis (1.3%), dyspnea (1.3%), urinary tract infection (1.3%), rash (1.3%), and myocardial infarction (1.2%).

Other serious clinical adverse experiences occurring since the drug was marketed or adverse experiences occurring in 0.5% to 1% of patients with hypertension or heart failure in clinical trials in order of decreasing severity within each category:

Cardiovascular: Cardiac arrest, myocardial infarction or cerebrovascular accident, possibly secondary to excessive hypotension in high-risk patients (see WARNINGS, *Hypotension*); cardiac arrest; pulmonary embolism and infarction; rhythm disturbances, atrial fibrillation; palpitation.

Digestive: Ileus, pancreatitis, hepatitis or cholestatic jaundice, melena, anorexia, dyspepsia, constipation, glossitis.

Nervous/Psychiatric. Oepression, confusion, ataxia, somnolence, insomnia, nervousness, paresthesia.

Urogenital: Renal failure, oliguria, renal dysfunction (see PRECAUTIONS and DOSAGE AND ADMINISTRATION).

Respiratory: Bronchospasm, rhinorrhea, asthma, upper respiratory infection.

Skin: Herpes zoster, pruritus, alopecia, flushing, photosensitivity.

Other: Vasculitis, muscle cramps, hyperhidrosis, impotence, blurred vision, taste alteration, tinnitus.

A symptom complex has been reported which may include fever, myalgia, and arthralgia; an elevated erythrocyte sedimentation rate may be present. Rash or other dermatologic manifestations may occur. These symptoms have disappeared after discontinuation of therapy.

Angioedema. Angioedema has been reported in patients receiving VASOTEC (0.2%). Angioedema associated with laryngeal edema may be fatal. If angioedema of the face, extremities, lips, tongue, glottis, and/or larynx occurs, treatment with VASOTEC should be discontinued and appropriate therapy instituted immediately. (See WARNINGS.)

Hypotension: In the hypertensive patients, hypotension occurred in 0.9% and syncope occurred in 0.5% of patients following the initial dose or during extended therapy. Hypotension or syncope was a cause for discontinuation of therapy in 0.1% of hypertensive patients. In heart failure patients, hypotension occurred in 6.7% and syncope occurred in 2.2% of patients. Hypotension or syncope was a cause for discontinuation of therapy in 1.9% of patients with heart failure. (See WARNINGS.)

Clinical Laboratory Test Findings

Serum Electrolytes: Hyperkalemia (see PRECAUTIONS), hyponatremia.

Creatinine, Blood Urea Nitrogen: In controlled clinical trials, minor increases in blood urea nitrogen and serum creatinine, reversible upon discontinuation of therapy, were observed in about 0.2% of patients with essential hypertension treated with VASOTEC alone. Increases are more likely to occur in patients receiving concomitant diuretics or in patients with renal artery stenosis. (See PRECAUTIONS.) In patients with heart failure who were also receiving diuretics with or without digitalis, increases in blood urea nitrogen or serum creatinine, usually reversible upon discontinuation of VASOTEC and/or other concomitant diuretic therapy, were observed in about 11% of patients. Increases in blood urea nitrogen or creatinine were a cause for discontinuation in 1.2% of patients.

Hemoglobin and Hematocrit: Small decreases in hemoglobin and hematocrit (mean decreases of approximately 0.3 g % and 1.0 vol %, respectively) occur frequently in either hypertension or heart failure patients treated with VASOTEC but are rarely of clinical importance unless another cause of anemia coexists. In clinical trials, less than 0.1% of patients discontinued therapy due to anemia.

Other (Causal Relationship Unknown): In marketing experience, rare cases of neutropenia, thrombocytopenia, and bone marrow depression have been reported.

Liver Function Tests: Elevations of liver enzymes and/or serum bilirubin have occurred.

Dosage and Administration: *Hypertension:* In patients who are currently being treated with a diuretic, symptomatic hypotension occasionally may occur following the initial dose of VASOTEC. The diuretic should, if possible, be discontinued for two to three days before beginning therapy with VASOTEC to reduce the likelihood of hypotension. (See WARNINGS.) If the patient's blood pressure is not controlled with VASOTEC alone, diuretic therapy may be resumed.

If the diuretic cannot be discontinued, an initial dose of 2.5 mg should be used under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions.*)

The recommended initial dose in patients not on diuretics is 5 mg once a day. Dosage should be adjusted according to blood pressure response. The usual dosage range is 10 to 40 mg per day administered in a single dose or in two divided doses. In some patients treated once daily, the antihypertensive effect may diminish toward the end of the dosing interval. In such patients, an increase in dosage or twice-daily administration should be considered. If blood pressure is not controlled with VASOTEC alone, a diuretic may be added.

Concomitant administration of VASOTEC with potassium supplements, potassium salt substitutes, or potassium-sparing diuretics may lead to increases of serum potassium (see PRECAUTIONS).

Dosage Adjustment in Hypertensive Patients with Renal Impairment: The usual dose of enalapril is recommended for patients with a creatinine clearance >30 mL/min (serum creatinine of up to approximately 3 mg/dL). For patients with creatinine clearance ≤30 mL/min (serum creatinine ≥3 mg/dL), the first dose is 2.5 mg once daily. The dosage may be titrated upward until blood pressure is controlled or to a maximum of 40 mg daily.

Heart Failure. VASOTEC is indicated as adjunctive therapy with diuretics and digitalis. The recommended starting dose is 2.5 mg once or twice daily. After the initial dose of VASOTEC, the patient should be observed under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions.*) If possible, the dose of the diuretic should be reduced, which may diminish the likelihood of hypotension. The appearance of hypotension after the initial dose of VASOTEC does not preclude subsequent careful dose titration with the drug, following effective management of the hypotension. The usual therapeutic dosing range for the treatment of heart failure is 5 to 20 mg daily given in two divided doses. The maximum daily dose is 40 mg. Once-daily dosing has been effective in a controlled study, but nearly all patients in this study were given 40 mg, the maximum recommended daily dose, and there has been much more experience with twice-daily dosing. In addition, in a placebo-controlled study which demonstrated reduced mortality in patients with severe heart failure (NYHA Class IV), patients were treated with 2.5 to 40 mg per day of VASOTEC, almost always administered in two divided doses. (See CLINICAL PHARMACOLOGY, *Pharmacodynamics and Clinical Effects.*) Dosage may be adjusted depending upon clinical or hemodynamic response. (See WARNINGS.)

Dosage Adjustment in Heart Failure Patients with Renal Impairment or Hyponatremia: In heart failure patients with hyponatremia (serum sodium <130 mEq/L) or with serum creatinine >1.6 mg/dL, therapy should be initiated at 2.5 mg daily under close medical supervision. (See DOSAGE AND ADMINISTRATION, *Heart Failure,* WARNINGS, and PRECAUTIONS, *Drug Interactions.*) The dose may be increased to 2.5 mg b.i.d., then 5 mg b.i.d. and higher as needed, usually at intervals of four days or more, if at the time of dosage adjustment there is not excessive hypotension or significant deterioration of renal function. The maximum daily dose is 40 mg.

For more detailed information, consult your MSD Representative or see Prescribing Information. Merck Sharp & Dohme, Division of Merck & Co., Inc., West Point, PA 19486. J6VS18R2(817)

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Pneumovax

The people in our State Department of Health are right on the ball when it comes to doing research and publishing their results in the JOURNAL.

In the current issue, Christine Nevin-Woods is listed as co-author of the article on pneumococcal bacteremia, but she was actually the head of the Communicable Disease Branch of the DOH at the time of the study. She has since left Hawaii.

The data on pneumococcal bacteremia as described should be of considerable interest to the practicing physicians of Hawaii. Our case-fatality rate is fairly low, probably indicating overall better health and physical stamina in our population as compared with that in several locales on the Mainland. The emphasis placed by the authors on the 35% mortality of those persons 65 years old or older, however, does not seem to take into account the well-known fact that Hawaii has the highest incidence of the elderly as a part of our population than any other state in the Union. Nor does the study indicate that the reason for the higher death rate in the elderly could very well be due to other inter-current degenerative diseases with which most of the persons are afflicted.

It used to be an honored dictum within the profession, one that helped physicians ease the pain in the remaining families of those who died, that "pneumonia was the old man's best friend" because it kept him from suffering the permanent vegetative state (PVS).

This might lead to a challenge of the other conclusion of the study, namely that practicing physicians need to place a greater emphasis on the benefits of administering *Pneumovax* as a one-time injection to all patients ≥ age 65, for the same reason, except that nowadays a 65-year-old is a "youngster," active, fit and employable to age 70 at least!

Finally, we agree that to do research on office medical records, and even to search the progress notes of hospital medical records, is a horrible and frustrating task when looking for minutiae, such as a pneumovax dose. We, personally, use a bold, rubber stamp of distinctive shape, or include a single page labeled "Immunizations" in the office medical record. To expect patients to keep and maintain their own immunization records is 90% impractical!

We do not favor trying to reach an overall 60% pneumonia vaccination rate for our State. The "rate" is not important; what's important is for every physician to decide on a case-by-case basis what's best for the patient.

J.I. Frederick Reppun, MD
Editor

Marcus Welby is dead

So said the Secretary of HHS Louis W. Sullivan, MD, when he addressed the AMA House of Delegates at its annual meeting in Chicago in June (as reported in HMA President Allan Kunimoto's "President's Message" in recent *HMA Newsletter).*

Sullivan was quoted as saying: "The long honeymoon of the American public and the kindly physician is over." We think not; we feel that there is already a resurgence of the doctor-patient relationship that has its incentives developing from both sides. The well-attended "Power of the Art Conference" at Poipu on Kauai in June is an example of that (see the September issue of the JOURNAL). More of the same conferences and symposia are in the pipeline. More and more young physicians are concerned with reinventing the one-to-one, doctor-patient, whole-person rapport.

The developments of high-tech medicine, the "corporate" practice of medicine in the highly competitive marketplace, the emphasis on "pay upfront or go elsewhere" at medical facilities and the concomitant lack of charity about which we have editorialized recently, citing the same Kunimoto report, are rapidly reaching a self-defeating endpoint, we feel. The medically educated and "informed" patient is very much more involved in the decision-making process than of old, and, he doesn't like the treatment being handed out impersonally by his doctors and their machines.

Sullivan makes much of the 11% of GNP being consumed by "health care," as if that figure were an obscenity. The obscenity can be more easily found in the production cost of $500 million for one — just one — Stealth bomber that should never be used purposefully. If the portion of the GNP is a reflection of public demand, then to force it to a lower level means restricting access to medical care, the decision to seek which is in the public's purview and not under physician control.

Sullivan's whining comment that "we are number one in the world in per capita expenditure for health care" should be taken as a compliment to our system, rather than a horrible statistic, provided it indicates the "con-

(Continued on page (510) ►



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It does not bode any good for the country that the Administration insists on tying ETs to the RBRVS that is being devised laboriously by the experts. Nor is the insistence on physicians spending more time, energy and effort on "health promotion and disease prevention" realistic, since there are actually too few of us and we are already overburdened, to respond to the need to treat people, much less educate them. The citizen's responsibility it is to look after himself and to not abuse himself to the point of illness or injury.

We do applaud, however, Secretary Sullivan's urging the profession to address the problem of the disparate ill-health of the poor and near poor. However, here again we can impart our knowledgeable input, but it is not up to us to devise a cost-beneficial system.

J.I. Frederick Reppun, MD
Editor

Report of the HMA President

Allan R. Kunimoto, MD

This year has gone by quickly. I can still remember standing before you at the Kona Surf in October 1988 wondering what have I gotten into. Since that time, Alan Nelson, who performed the inaugural ceremony, has become the President of the American Medical Association (AMA) and my term as your president has come to an end.

This year several new committees were formed: The Mental Health Committee chaired by Robert Palmer and the ad hoc Committee on Native Hawaiian Health chaired by Ernest Bade, both of which have been very active. Because of a need for the Hawaii Medical Association (HMA) to intervene and help its members, another committee, the HMA Drug Enforcement Committee, was formed to communicate with the State Narcotics Drug Enforcement Division on a regular basis.

One of the great concerns to the medical community has been the Harvard RBRVS (Resource Based Relative Value Scale). Your organization has attempted to keep all of the physicians in the State informed about this controversial study and has carried your voices to the AMA House of Delegates.

To foster better community relations and to improve the image of physicians in the community, your organization took part in several fairs, including the Great Aloha Run Health & Fitness Fair in February, and won first prize for its booth. HMA also created the "HMA Kahuna Lapa'au Medical Science Award," a $1,000 scholarship award, in addition to our usual prizes, for the Hawaii Science & Engineering Fair. Your organization has started to raise funds for a weekly TV program to be shown on Sunday afternoons on Channel 2 with a professionally done "Health Matters" topic, followed by a panel of local physicians to educate the public on preventive health, new medical technology, health subjects, and environmental health concerns in the community.

We are very appreciative of Becky Kendro and Richard Lundborg, both who testified on behalf of HMA on more than 140 legislative bills relating to medicine and environmental issues at this past session. We also thank Max Cooper and Thomas Kobara, who both testified on behalf of the Medical Coalition for Tort Reform (SMART) on all the tort issues. In addition, your organization was instrumental in generating a "meeting of the minds" of all of the various organizations for the passage of the Health Care Quality Improvement Act of 1986.

After the passage of the State Health Insurance Program (SHIP) for the "gap group" earlier this year, your HMA has been busy as part of the Department of Health Advisory Group giving physician input to the formation of this plan; it was presented to the Legislature on October 13, 1989, in preparation for implementation in March 1990.

HMA asked the AMA to send us two representatives, Ron Hendrichs, Director of the Department of Young Physicians, and Michael Collins, Young Physicians Section, to address a group of young physician members of the HMA to develop interest in pursuing establishment of a Hawaii Young Physicians group for representation at the AMA.

Your leadership has met with State Health Director John Lewin on several occasions to foster better communication with the Department of Health. Our Long-Range Planning & Monitoring Committee has recommended forming a new committee, Liaison with Medical School & Department of Health, to develop and maintain communication between our organizations. Hawaii was very fortunate in having Christian Gulbrandsen selected as the new dean of the John A. Burns School of Medicine; he has been an active member of the HMA for many years.

Because of a number of complaints from members regarding HMSA concerning "downcoding," delayed payments, and other problems, your leadership met with the officers of HMSA and, through the Private Health Care Insurers Committee chaired by Gerald Faulkner, we have developed better communications. We have formed a new HMA-HMSA committee to resolve payment problems sustained by our members.

An initial survey has been sent out to our members to help us evaluate the feasibility of creating a new trust company in conjunction with other professional organizations to create additional income for the HMA to be used

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to lower dues and to provide for community projects for medical information.

In the present changing health-care environment, physicians simply must become involved in organized medicine to protect their interests and their patients' interest and to preserve the high quality of health care that our nation now enjoys.

If you read about the many activities of the various HMA committees, you will understand how much your state medical association is doing for its physician members, their patients, and our community. I would like at this time to thank all of my comissioners, committee chairmen and committee members for the unselfish giving of their time and devotion and for a job well done.

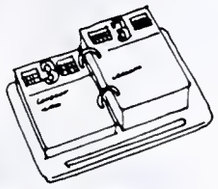
I would like to thank the HMA Auxiliary, led by Mrs. Edith Don, for its fine work this year, including its help during the legislative session and at our AMA "Hawaiian Party," and also for raising money for medical education.

My heartfelt thanks go to Jon, Becky, Nelson, Marilyn and the staff for their dedication and hard work. Without them, this organization could not function. Also, without the help of my hardworking Executive Committee, I could not function. It has been a great honor and privilege for me to serve as your president, and I am extremely grateful to all of you who have helped to support me.

I wish our incoming president, John Kim, a rewarding and productive year and strongly urge all HMA members to give him their most active support.

RECOMMENDATIONS

1. Continue to pursue projects to make the HMA financially self-sufficient so that we can reduce our dues and make membership in our organization "affordable" (one consideration can be the trust company).
2. Continue to increase the number of community projects to improve the "image" of medicine; pursue avenues of funding for our "HMA TV Weekly Program" to inform our patients about preventive health, new medical technology, health information and new modes of treatment (this would be a great public relations project).
3. Continue to foster communication between HMA and the John A. Burns School of Medicine, the Department of Health, HMSA and other private carriers, the hospitals and community health organizations.
4. Encourage all the physicians of Hawaii to take at least one day off to see the AMA House of Delegates in action at the Hilton Hawaiian Village in December 1989.



Continuing Medical Education

CALENDAR OF ACCREDITED EVENTS—CATEGORY 1

Accredited Programs of CME allow one unit of AMA credit for each hour of instruction excluding all "breaks." Some programs also are accredited for AAFP prescribed credit.

LOCAL ACCREDITED PROGRAMS ONGOING

For a complete list of ongoing programs, please refer to the September 1989 edition of the HAWAII MEDICAL JOURNAL. Further information is available through the individual institutions or through the HMA's CME Department.

SPECIAL EVENTS

All special events should be confirmed with the CME program sponsors, as cancellations are not necessarily reported to the HAWAII MEDICAL JOURNAL.

The Hawaii Medical Association does not review or evaluate the programs listed in the Hawaii Medical Journal Continuing Medical Education column and assumes no responsibility for educational value, scientific content, changes in agenda or cancellations.

JANUARY

1/02-1/06

Obstetrics, Gynecology, Perinatal Medicine and the Law expanded to include **Emergency Medicine, Anesthesiology and Surgery.** Contact: American Society of Law & Medicine, 765 Commonwealth Ave., Boston, MA 02215. Location: Hyatt Regency Waikoloa, Big Island of Hawaii.

1/10-1/14

Trans-Pacific Allergy & Immunology Society Annual Meeting. Contact: American Academy of Allergy & Immunology, 611 E. Wells St., Milwaukee, WI 53202. Location: Kona, Big Island of Hawaii.

1/14-1/19

Hawaiian Seminar on Clinical Anesthesia. Contact: CSA, 1065 E. Hillsdale Blvd., Ste. 410, Foster City, CA 94404, 415-345-3020. Location: Sheraton Kauai, Poipu Beach, Kauai.

1/14-1/20

The Hospital Medical Staff & Trustee Conference. Contact: Estes Park Inst. Box 400, Englewood, CO 80151; 800-223-4430. Location: Kona, Big Island of Hawaii.

1/20-1/27

Update: Controversies in Emergency & Primary Care. Contact: Edith S. Bookstein, American Institute of Postgraduate Education, P.O. Box 2586, La Jolla, CA 92038, 619-454-3212. Location: Kona Surf Resort, Big Island of Hawaii.

1/21-1/25

Family Practice: Caring and Curing. Kauai Fund for Continuing Education, co-sponsored by Hawaii Medical Association. Contact: David Elpern, MD, 3420-B Kuhio Hwy., Lihue, HI 96766; 808-245-1173. Location: Poipu Beach, Kauai.

1/22-1/26

8th Annual Hawaii Conference on Gastrointestinal and Hepatic Diseases. The Honolulu Medical Group Research & Education Foundation and co-sponsored by the Hawaii Medical Associa-

(Continued on page 526) ►



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Pneumococcal bacteremia in Hawaii: Initial findings of a pneumococcal disease prevention project

John F. Campbell, MD*
Marian A. Donohue, MPH**
Robert B. Mochizuki†
Christine L. Nevin-Woods, DO, MPH**
John S. Spika, MD*

The Hawaii Department of Health (DOH) recently established a pneumococcal disease initiative to determine the scope of serious pneumococcal disease in residents of Hawaii and to investigate methods of increasing vaccine utilization in the State. The initial phase of the project involved a review of pneumococcal bacteremia at all 38 microbiology laboratories in Hawaii during 1986 and 1987. Two hundred twenty-two residents with bacteremia were identified. Eighty-six percent of adults had pneumonia as the primary source of bacteremia. In children > 5 years old, pneumonia was present in 24%, otitis media in 35%, and meningitis in 11%. Bacteremia with no apparent focus of infection was found in 30% of children. The overall annual incidence of pneumococcal bacteremia was 9/10⁵ population. Rates were highest in children >2 years old (103/10⁵) and persons ≥65 years old (22/10⁵). These are similar to rates reported from other populations in the United States during the 1970s and early 1980s, but are less than those detected in 2 more recent population-based studies. The overall case-fatality rate in our study was relatively low (16%); however, 35% of persons ≥65 years old died. A record of previous pneumococcal vaccination was found in the medical records of only 2 (1%) patients. Our study confirms that pneumococcal bacteremia causes significant morbidity and mortality among elderly residents of Hawaii and suggests that vaccine coverage is very low among this high-risk population. Phase 2 of the initiative included surveys of Hawaii physicians and the public to ascertain attitudes toward pneumococcal immunization. These surveys will help improve future adult immunization programs in Hawaii and other parts of the country.

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Introduction

It is estimated that 16,000 to 55,000 persons develop pneumococcal bacteremia each year in the United States and that approximately 20% of these persons die as a result of their infections in spite of antibiotic therapy and aggressive medical care[1]. Pneumococcal vaccine is recommended for persons ≥2 years old with medical conditions that place them at high risk for pneumococcal disease and for all persons ≥ 65 years old[1]. Although the vaccine has been shown to be effective in preventing pneumococcal bacteremia in certain high-risk groups[2,4], and a publicly administered vaccine program could be cost-effective[5], physicians have not accepted pneumococcal vaccination as a routine part of health care for adults. The US Public Health Service (USPHS) has recently reaffirmed the need for better pneumococcal vaccination programs, and a goal of vaccinating 60% of persons in the United States at high risk for pneumococcal infection has been set[6].

Recognizing the need for preventive health-care programs for adults, the DOH recently established a comprehensive pneumococcal disease initiative to evaluate the scope of serious pneumococcal disease in residents of Hawaii and to investigate practical and cost-effective methods of increasing vaccine utilization in the State. The initial phase of the project involved a review of pneumococcal bacteremia in Hawaii to establish a baseline for future studies and interventions. The data we present here confirms that pneumococcal disease is an important public health problem in Hawaii.

Methods

Patients with blood cultures positive for *Streptococcus pneumoniae* during 1986 or 1987 were identified by reviewing records at all 38 microbiology laboratories in Hawaii that process blood cultures. Records at 1 laboratory were unavailable for January and February of 1986. Hospital and physician charts were reviewed for each episode of pneumococcal bacteremia identified, using a standarized data collection form. Information on the patient's age, sex, residence, clinical presentation and outcome of the illness was collected. The sites of infection were determined from physicians' notes. In most cases,

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the physicians' clinical diagnoses of pneumonia were confirmed radiographically, and diagnoses of meningitis were confirmed by abnormal cerebrospinal fluid analysis, including isolation of *S. pneumoniae*. Otitis media was diagnosed on clinical grounds. All recognized sites of infection were recorded for each patient. A diagnosis of pneumococcal bacteremia without a focus was recorded if the physicians' records did not indicate any localizing signs or symptoms of infection. Only 1 episode of bacteremia was analyzed for each patient. Estimates of the incidence of bacteremic disease were calculated, using 1986 and 1987 census data for the State of Hawaii[7]. Age groups for our analysis were selected to match current age recommendations for pneumococcal vaccination and the standard groups used by the Census Bureau. The 95% confidence intervals for incidence rates were based on the variance of proportions as described by Armitage[8].

Results

A total of 240 patients with pneumococcal bacteremia in 1986 or 1987 were identified. Fourteen patients were not residents of Hawaii and residence was unknown in 6 patients (Table 1). The remaining 220 patients were included in the analysis. All pneumococcal bacteremia detected was community-acquired. The overall male-to-female ratio was 1.3:1. Males predominated in all age groups except the 5- to 44-year-old group (Table 2). Patient ages ranged from 2 months to 96 years old. Seventy-three (33%) patients were <2 years old and 46 (21%) were ≥65 years old (Table 2). There were 91 patients with bacteremia in 1986 and 129 patients in 1987. Bacteremic illness was detected throughout the year; however, 126 (57%) of the bacteremia occurred in January through May (Figure 1).

The clinical presentations of the 220 residents with bacteremia are shown in Table 3. Pneumococcal bacteremia had a variety of manifestations in children <5 years old; otitis media was diagnosed in 33 (35%), bacteremia without a focus of infection in 28 (30%), pneumonia in 23 (24%) and meningitis in 10 (11%). In patients ≥5 years old, pneumonia was the most common finding, being diagnosed in 108 (86%).

The overall annual incidence of pneumococcal bacteremia was $9/10^5$ population (Table 2). Rates of disease were highest in the very young ($103/10^5$ children <2 years old) and the elderly ($22/10^5$ persons ≥65 years old). The incidence was relatively low ($5/10^5$) in persons 2 to 64 years old (Figure 2). The incidence of bacteremia in males was $10/10^5$ population compared with $8/10^5$ population in females.

The overall case-fatality rate for pneumococcal bacteremia was 16% (Table 2). Although young children had very high rates of disease, only 4% of children <2 years old died as a result of their infections. Case-fatality rates were highest in older adults, with bacteremia being a direct or contributing cause of death in 16 (35%) patients ≥65 years old. The case-fatality rate for all ages was 9% in patients with bacteremia without a focus of infection, 23% in patients with bacteremic pneumonia, and 24% in patients with bacteremic meningitis. The case-fatality rate was 20% in males and 12% in females.

TABLE 1

PNEUMOCOCCAL BACTEREMIA, HAWAII, 1986-1987
NUMBER OF PATIENTS BY ISLAND OF RESIDENCE

Residence	Number of Patients
Hawaiian Islands	
Oahu	160
Hawaii	30
Maui	16
Kauai	10
Molokai	4
Out-of-state	14
Residence unknown	6
Total	240

Figure 1. Pneumococcal bacteremia, Hawaii, 1986-1987
Number of patients by month

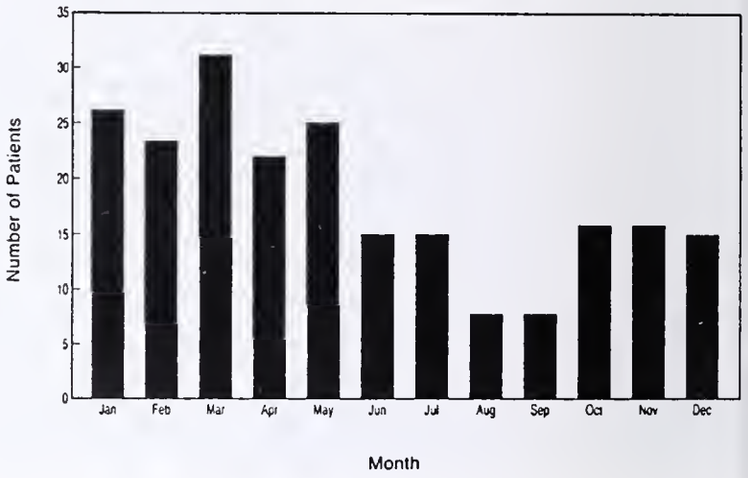
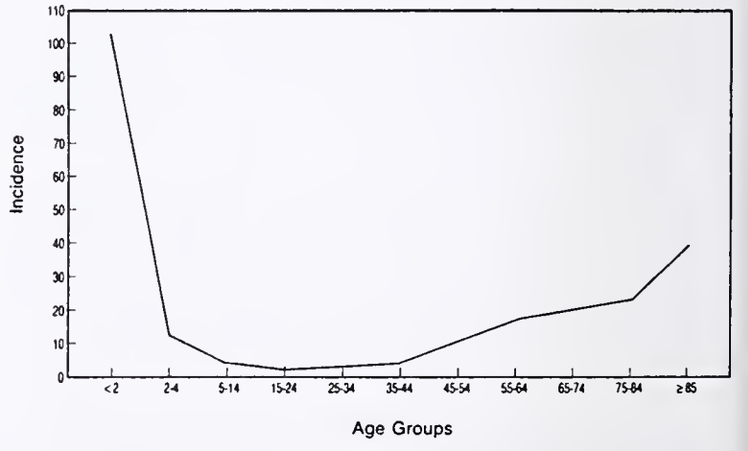


Figure 2. Pneumococcal bacteremia, Hawaii, 1986-1987
Annual incidence per 100,000 popuiation by age groups



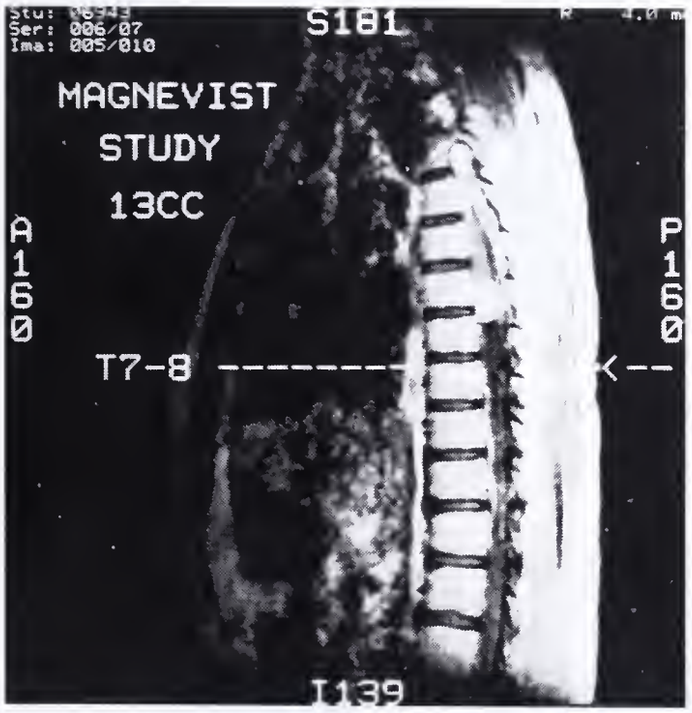
A record of pneumococcal vaccination was found in the medical chart of 2 (1%) patients. One hundred eighty-eight (85%) of the patients were hospitalized for treatment of their illness.

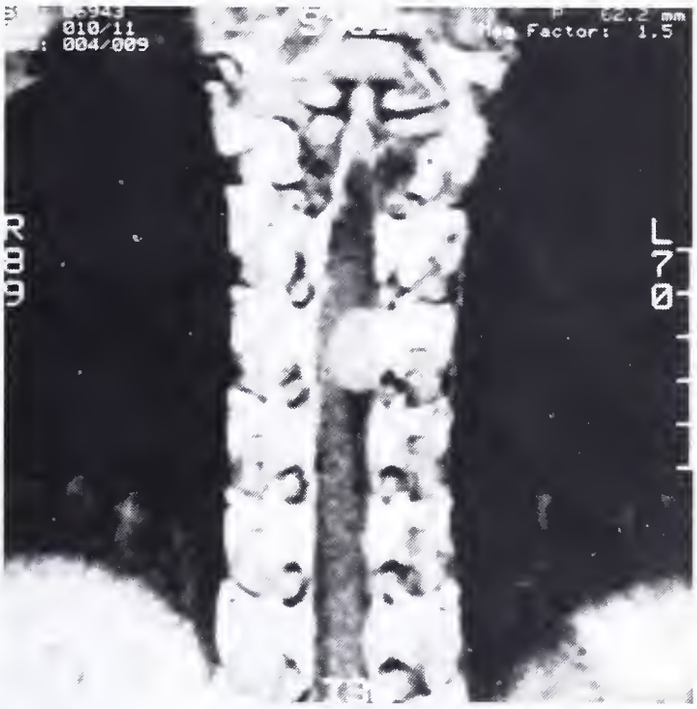
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These images were produced by MRI Center of the Pacific using their 1.5 Tesla GE Scanner.

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TABLE 2

INCIDENCE AND CASE-FATALITY RATES OF PNEUMOCOCCAL BACTEREMIA, HAWAII, 1986-1987

Age Group (years)	Males	Females	Total	Number of Deaths	Incidence* and 95% Confidence Interval	Case Fatality Rate(%)
<2	40	33	73	3	103 (69,136)	4
2-4	13	8	21	0	12 (5,19)	0
5-44	21	21	42	4**	3 (2,04)	10
45-54	10	9	19	7	10 (4,16)	37
55-64	11	8	19	5	10 (3,16)	26
65-74	14	11	25	9	19 (8,29)	36
75-84	8	5	13	4	22 (5,38)	31
≥85	6	2	8	3	47 (1,93)	38
Total	123	97	220	35	9 (7,11)	16

* Annual incidence per 100,000 population.
** Outcome unavailable for one 20-year-old patient.

TABLE 3

CLINICAL MANIFESTATIONS OF PNEUMOCOCCAL BACTEREMIA BY PATIENT AGE GROUP, HAWAII, 1986-1987

Age Group (years)	Number of Patients with*				
	Bacteremia Without a Focus	Pneumonia	Meningitis	Otitis Media	Other Source**
<2	21	14	9	28	8
2-4	7	9	1	5	1
5-44	4	33	1	0	6
45-54	1	17	0	1	2
55-64	1	14	4	0	3
65-74	0	25	1	0	4
75-84	1	11	1	0	1
≥85	0	8	0	0	0
Total	35(16%)	131(60%)	17(8%)	34(16%)	25(11%)

* Patients could have multiple sites of infection.
** Pleural effusion, cellulitis, arthritis, peritonitis, or mastoiditis.

Discussion

The incidence of pneumococcal bacteremia in Hawaii is 9/10^5 population, a rate similar to those previously reported from studies conducted in Charleston, South Carolina (9), and Huntington, West Virginia[10] (Table 4). The incidence of bacteremia in adults ≥65 years old, an easily identified group that comprises approximately one-half of the individuals at high risk for pneumococcal disease, was 22/10^5 in Hawaii. This rate is nearly identical to rates reported from the Huntington and Charleston studies but less than those detected in 2 more-recent studies. Istre et al. reported an incidence of serious pneumococcal disease of 87/10^5 population in Oklahoma City residents ≥70 years old[11], and Breiman et al. reported a rate of 53/10^5 population in persons ≥ 65 years old in a follow-up study of pneumococcal bacteremia in Charleston in 1986-1987[12]. Regional differences in physician awareness of pneumococcal illness and more frequent requests for blood cultures from febrile patients with pneumonia may account for some of the variation in rates of detected bacteremia[12].

The overall case-fatality rate of 16% in Hawaii residents with bacteremia is slightly less than those reported in other studies (Table 4). However, the 35% case-fatality rate for adults ≥65 years old underscores the importance of pneumococcal disease as a cause of death in residents of Hawaii. This trend toward higher case-fatality rates in adults has been a consistent finding in other areas of the country. Likewise, the higher rates in males, the winter-spring distribution of cases, and the predominance of pneumonic disease in adults were expected.

A recent survey of 35,000 households in the United States found that approximately 10% of high-risk individuals reported having received pneumococcal vaccine[13],

►

TABLE 4

OVERALL INCIDENCE AND CASE-FATALITY RATES FROM SELECTED COMMUNITY-BASED STUDIES OF PNEUMOCOCCAL BACTEREMIA

Study (Reference)	Incidence per 100,000 Population	Case-Fatality Rate (%)
Hawaii 1986-1987	9.0	16.0
Charleston[9] 1974-1976	8.1	21.0
Huntington[10] 1978-1981	7.5	25.0
Oklahoma[11] 1984	14.3*	18.7
Charleston[12] 1986-1987	18.7	17.2

* Patients with bacteremic meningitis excluded.

and in 2 recent case-control studies of pneumococcal vaccine efficacy, 18%[2] and 20.8%[3] of control patients were found to have been previously vaccinated (from a thorough search of the patients' medical records).

Only 1% of patients in our study had a record of pneumococcal vaccination in their hospital charts. Although we did not search all sources of medical care for each patient to obtain vaccination status, current pneumococcal vaccine coverage in Hawaii residents is unlikely to approach the 60% goal established by the USPHS. Better methods of documenting vaccination status, such as highly visible vaccination documentation in medical charts and individual vaccination cards kept by the patients, would help identify persons who have been vaccinated. Knowledge regarding the physicians' and the public's attitudes toward vaccine indications, safety, and efficacy is needed in order to devise practical and effective vaccination strategies.

The second phase of the DOH pneumococcal project included a survey of all physicians in the State to collect information on knowledge and opinions about adult immunizations, particularly pneumococcal vaccine. A survey of public attitudes toward vaccination was conducted during the DOH campaign to vaccinate high-risk residents of the State. These surveys will provide data for use in formulating more effective public education programs and allow health officials to work with private physicians to sustain vaccination efforts in physician offices, clinics, and hospitals in Hawaii. These studies will also prove useful in other areas of the country where adult immunization projects are being considered. ■

ACKNOWLEDGEMENTS

Laboratories and hospitals throughout Hawaii made reports and medical records available for this study. We wish to thank the research board members and staff of these institutions for their assistance. We also wish to thank the following project advisers for their guidance and support: Thomas Hicks; Marshall McBean, MD; David Morens, MD; Francis Pien, MD; John Peyton, MD and Warren F. Wong, MD. The use of Army medical records in the preparation of this report is acknowledged, but it is not to be construed as implying official Department of the Army approval of the conclusions presented.

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Current perspectives in the management of temporomandibular joint disorders

George A. Wessberg, DDS*
Arthur Kamisugi, DDS**

Many clinicians express emphatic viewpoints on the most appropriate treatment of "TMJ patients." Most of these treatment philosophies are substantiated by a strong personal faith, a few miraculous testimonials, and scant scientific evidence. These clinicians more closely resemble disciples on a religious crusade than objective scientific investigators.

Clinical success following the treatment of individuals with TMJ problems is quite difficult to assess, when diagnosis is so general that it includes numerous masticatory, neuromuscular and temporomandibular joint conditions which can be caused by a variety of unrelated factors. It is essential for medical and dental professionals to eliminate the quasi-diagnosis of the TMJ problem from our vocabulary and develop standardized diagnostic and treatment criteria for specific disorders of the temporomandibular joint and masticatory apparatus.

Disorders of the temporomandibular apparatus can be arranged into 2 categories: Myalgias and arthralgias.

A. Myalgias
 1. Myospasm
 2. Myofibrositis
B. Arthralgias
 1. Capsulitis
 2. Retrodiscitis
 3. Meniscus displacement
 4. Meniscus dislocation
 5. Osteoarthritis
 6. Arthritis
 7. Condylar dislocation
 8. Ankylosis
 9. Neoplasia

One or more of these diagnoses can only be established after a thorough history and comprehensive clinical evaluation. The examination includes digital palpation of the muscles of mastication and the temporomandibular joints, measurement of mandibular movements, auscultation of TMJ noises, and assessment of the TMJ response to functional loading and hyperextension. Plain radiographs may identify gross abnormalities in articular morphology, but are generally insufficient to confirm specific arthralgias, such as TMJ meniscus displacements.

Definitive diagnoses of specific disorders of the masticatory apparatus can often be confirmed by specific procedures, such as electromyography, kinesography, magnetic resonance imaging, arthrography, and CT scans. However, the expense and morbidity (in the case of arthrography) associated with these tests may not be necessary in many instances when the diagnoses are established by appropriate historical and clinical evidence.

Etiological factors

The diagnosis of temporomandibular disorders can hardly be deemed significant without the primary symptoms of preauricular pain and/or mandibular dysfunction. These essential characteristics may occur with a variety of secondary symptoms, including headaches, neckaches, visual disturbances, otological disturbances (earaches, tinnitus, vertigo), paresthesia of hands and fingers, nausea, etc. These secondary symptoms are generally thought to be compensatory responses to the specific temporomandibular disorders within the head and neck neuromusculature.

It is our opinion that most, if not all, disorders of the temporomandibular apparatus can be caused by one or more etiological factors evolving from 3 general categories: Physical, occlusal and emotional (Table 1).

One or more of these factors may directly *precipitate* the TMJ disorder and one or all of these factors may directly or indirectly *perpetuate* them. It is the complex inter-relationship of these seemingly diverse factors which makes the comprehensive management of individuals with TMJ disorders such a challenge. Hence, a multi-disciplinary approach is often essential to proper management.

Management protocol

We have developed a conservative protocol which is designed to minimize treatment and yet facilitate the healing capacity of the biological tissues. Our initial goal is to control pain, then restore masticatory function.

Our therapeutic approach focuses on the relative magnitude of the specific etiological factors: Physicial, occlusal, and emotional components (Table 2).

Our treatment protocol involves 2 phases. The first phase involves "reversible" modalities which serve to reaffirm the diagnosis as well as to facilitate healing. The second phase

(Continued on page 523) ►

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TABLE 1
Etiologies

- A. Physical
 - 1. Connective tissue abnormalities
 - a. Laxity of TMJ ligaments/capsule
 - b. Poor quality of collagen
 - 2. Major trauma
 - a. Blunt force
 - b. Mandibular hyperextension
- B. Occlusal
 - 1. Dental imbalances
 - a. New restorations
 - b. Orthodontic therapy (transient)
 - 2. Malocclusion
 - a. Unfavorable mandibular condylar displacement
 - b. Unstable occlusal relationship
 - 3. Developmental jaw deformities
 - a. Maxillary dysplasia
 - b. Mandibular dysplasia
- C. Emotional
 - 1. Stress behavior
 - a. Anxiety, anger, fear, frustration
 - 2. Psychological/psychiatric conditions
 - a. Conversion reaction
 - b. Chronic pain behavior

TABLE 2
Therapies

- A. Physical
 - 1. Physical Therapy
 - a. Rest
 - b. Massage
 - c. Diathermy
 - d. Posture
 - e. Mobilization
 - 2. Adjunctives Physical Therapy
 - a. TENS
 - b. Ultrasound
 - c. Nutritional supplements
 - d. NSAIDs
 - e. Local anesthetic injections
 - 3. TMJ Surgery
 - a. Arthroscopy
 - b. Arthrotomy
- B. Occlusal
 - 1. Mandibular orthotic appliance (splint)
 - 2. Occlusal adjustment
 - 3. Orthodontics
 - 4. Orthognathic surgery
- C. Emotional
 - 1. Relaxation training
 - 2. Biofeedback therapy
 - 3. Psychotherapy

incorporates relatively "irreversible" modalities to manage specific physical and/or occlusal disorders (Table 3).

TABLE 3
Regimen

- A. Phase IA (2-4 weeks)
 - 1. Physical therapy
 - 2. Adjunctive physical therapy
 - 3. Relaxation training
- B. Phase IB (4-12 weeks)
 - 1. Physical therapy
 - 2. Mandibular orthotic appliance (splint)
 - 3. Biofeedback training
 - 4. Psychotherapy
- C. Phase II
 - 1. Occlusal correction
 - 2. TMJ surgery

Findings

We evaluated 597 consecutive patients referred to our office (GAW) between August 1981 and June 1985 with the general complaint of "jaw pain" or "TMJ problems." Definitive diagnoses were established on the basis of specific historical data and clinical evidence. We classified these patients into 2 diagnostic groups: Myalgias and Arthralgias. Patients with combined myalgias and arthralgias were placed in the Arthralgia group:

Myalgias	=	222
Arthralgias	=	375
TOTAL	=	597

The common complaints shared by these individuals were preauricular pain and/or mandibular dysfunction. Individual patients may have had additional complaints of varying importance. We established one or more specific diagnoses of underlying conditions to explain each complaint.

Results

All patients were given our basic instructions in Phase IA therapy. Some of these patients returned after a few weeks and participated in Phase IB therapy. We did not make any remarkable effort to pursue patients who did not request additional therapy; therefore, the results of our treatment are based upon patients who chose to pursue treatment (Table 4).

Each patient who underwent orthognathic or temporomandibular joint surgery was followed for a minimum of 12 months post-operatively. "Successful" results were determined by the patient's subjective responses and objective criteria, including jaw mobility, occlusal relations and mandibular function. Our results are shown in Table 5.

Discussion

There were only 26 patients (4.6%) who underwent orthognathic surgery and 25 patients (4.4%) with 37 joints who

►

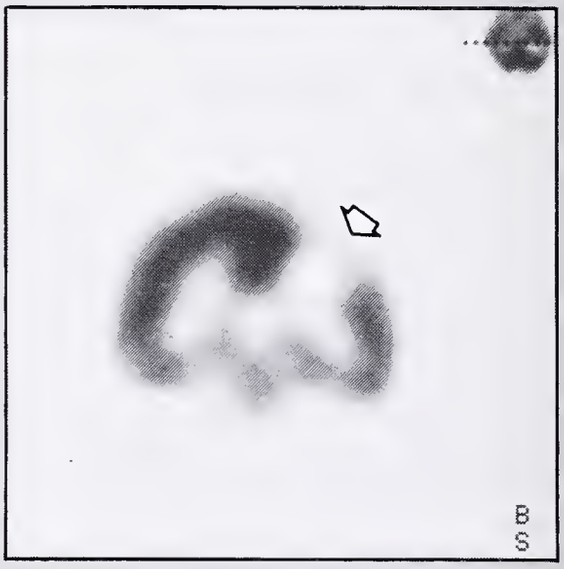
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1. Normal transaxial image - Tomographic images are routinely done in the transaxial, sagittal, and coronal planes. Note the uniform distribution of activity throughout the brain.



2. 65 year-old female with acute CVA - Coronal view shows a large wedge-shaped perfusion defect seen in the left parietal area (arrow). CT was negative.



3. 45 year-old patient with schizophrenia - The sagittal view shows decreased perfusion of the frontal lobe often seen in schizophrenics.



4. 60 year-old male with memory loss - Transaxial views show decreased perfusion of the temporal-parietal regions (arrow) consistent with Alzheimer's disease.

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TABLE 4

Masticatory Disorders

Myalgias	
Nonsurgical	180
Surgical	26
Capsulitis	
Nonsurgical	32
Surgical	0
Meniscus Displacement	
Nonsurgical	230
Surgical	15
Osteoarthrosis	
Nonsurgical	4
Surgical	6
Hypermobility	
Nonsurgical	40
Surgical	4
Hypomobility	
Nonsurgical	27
Surgical	0
TOTAL PATIENTS	564

TABLE 5

Surgery

Orthognathic	
Successful	24 pts
Unsuccessful	2 pts
Eminoplasty	
Successful	8 jts
Unsuccessful	0 jts
Meniscus Repairs	
Successful	14 jts
Unsuccessful	2 jts
Meniscus Replacements	
Successful	1 jt
Unsuccessful	1 jt
Condylar Prostheses (Silastic)	
Successful	10 jts
Unsuccessful	1 jts

underwent TMJ surgery. Furthermore, of the 375 patients who were diagnosed with an actual TMJ disorder, only 6.6% underwent TMJ arthrotomy. Our success rate then was: Orthognatic 92.3% and TMJ surgery 84.0%, or a total rate of 88.2%.

The multifactorial nature of these disorders of the masticatory apparatus makes absolute cure unlikely. However, when specific anatomical problems are identified and corrected in an appropriate manner the medical/dental team should expect a favorable response in every individual. Several illustrations are provided to demonstrate the specific surgical techniques that we utilized to manage the patients in this study (Figs. 1-4).

The study of the clinical success of diagnosis specific treatment of disorders of the masticatory apparatus represents our philosophy. This philosophy is based upon our belief that human jaw muscles and jaw joints possess the capacity to repair themselves if appropriate physiological circumstances can be created. Hence, our goal in management is to minimize or eliminate parafunctional habits and unnecessary functional demands of the masticatory apparatus until the injured tissues can regenerate to the state where normal function can resume without pain.

We feel that clinical success in the management of individuals with disorders of the masticatory apparatus depends upon the therapist's ability to identify all physical, occlusal and emotional components of the problem. Furthermore, the patient must have appropriate motivation in order to participate in the comprehensive management of the problems.

Our data demonstrate a relatively low incidence of surgery (9%) for this patient population. We are encouraged by favorable patient responses to our simple physiotherapeutic regimen. When definitive jaw alignment surgery (orthognathic) or TMJ

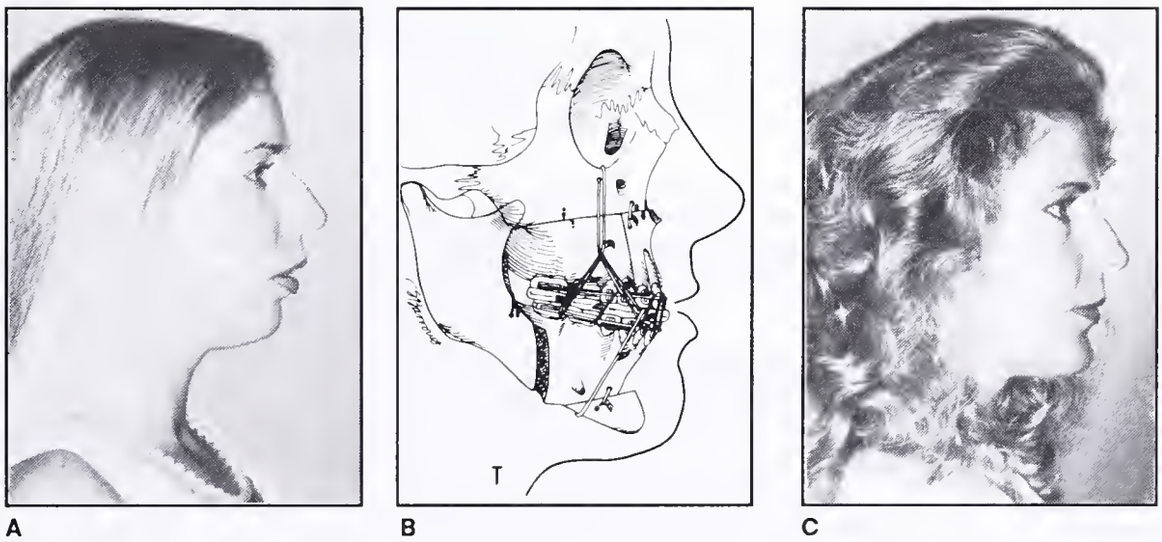


Fig. 1
A. Individual in profile view with maxillary vertical hyperplasia and mandibular sagittal hypoplasia. B.Surgical repositioning of jaws via combined maxillary and mandibular osteotomies
C. Profile view of same individual following orthognathic surgery to align jawbones to facilitate proper masticatory neuromusculature function.

►

surgery becomes an appropriate option for the patient, we generally recommend orthodontic treatment to insure that the occlusion will be compatible with proper mandibular condyle-TMJ meniscus relations. We also feel emotional stress is often a remarkable perpetuating factor and must be managed in order to achieve optimal results.

Summary

This clinical study evaluates our personal experience with 597 patients referred for management of various disorders of the masticatory apparatus. Data were obtained on 564 of these individuals who were diagnosed as having myalgia and/or TMJ arthralgia. Twenty-six patients underwent orthognathic surgery and 25 patients (37 joints) underwent TMJ surgery with a total clinical success of 88.2%.

We feel it is important for physicians and dentists to *eliminate the quasi-diagnosis of a "TMJ problem"* from our professional vocabulary and to use more specific diagnoses of these masticatory disorders. We also advocate a comprehensive, non-surgical treatment regimen for these patients before any surgery is contemplated. Failure to address these disorders in a comprehensive manner generally complicates appropriate management of these individuals. A combination of physicial and psychological therapy appears to provide optimum results when supported by appropriate dental management. ■

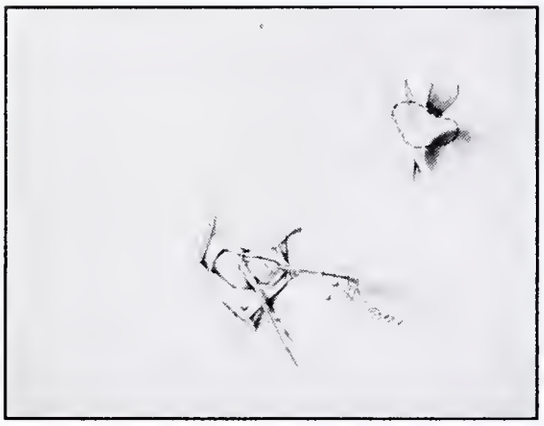


Fig. 2 Surgical removal of articular eminence via a small preauricular incision to prevent recurrent mandibular condylar dislocation.



Fig. 3A Excision of redundant retrodiscal tissue from an anteriorly displaced TMJ meniscus.



Fig. 3B Plication of retrodiscal tissues to reposition meniscus over mandibular condyle.

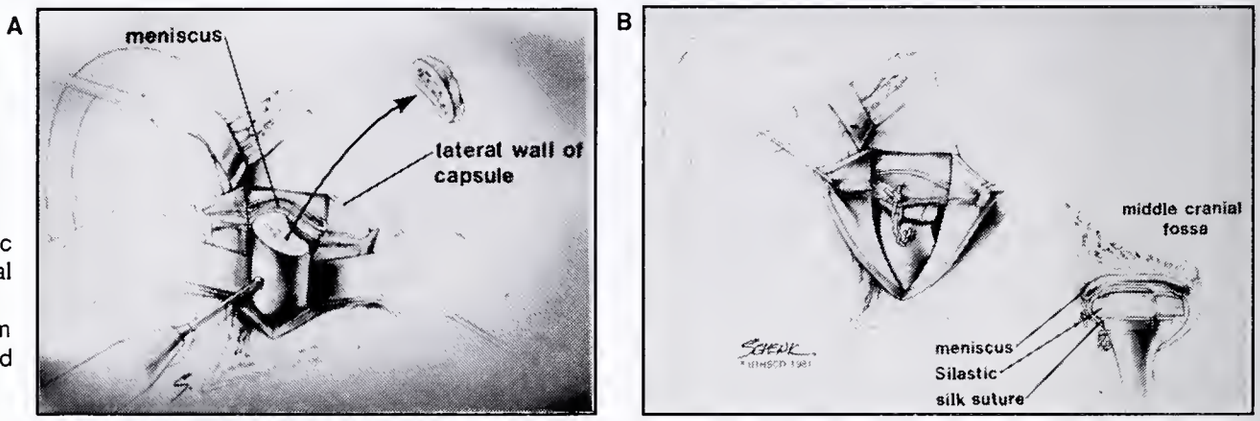


Fig. 4
A. Excision of osteoarthritic condylar surface with surgical bur.
B. Attachment of custom Silastic prosthesis to prepared condylar stump.

CONTINUING MEDICAL EDUCATION *(Continued from page 511)*

tion. Contact: Gary Glober, MD, 1380 Lusitana St., Suite 701, Honolulu, HI 96813, 808-536-1021. Location: Hyatt Waikoloa, Big Island of Hawaii.

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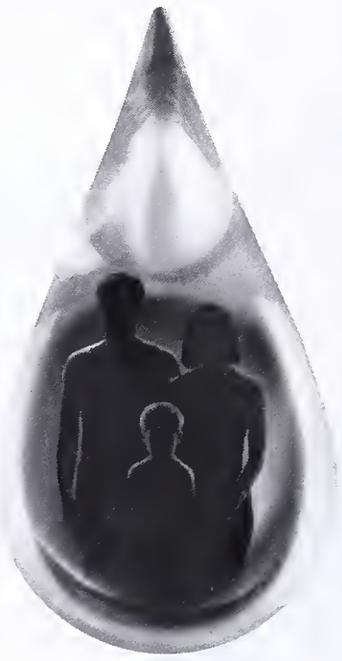
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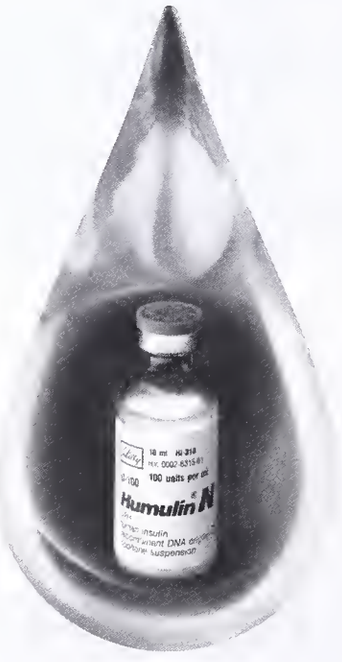
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A medical home for every child

Our very active ex-president of the HMA, also the ex-president of the Hawaii Chapter of the American Academy of Pediatrics, Calvin Sia, has provided the JOURNAL with a trilogy of articles pertaining to the concept of a Medical Home for Every Child. In this issue he and Jean Stewart have provided us with the third leg.

The first article on the subject was published in these pages in 1985 and dealt with Child Abuse Prevention and Positive Child Development; the second article discussed the needed education of physicians in order for the caregivers to be aware of the psychosocial problems associated with the "new morbidity" and with improving the child's access to preventive care.

This time, Cal explains the implications of Public Law 99-457. In his words: "This article focuses on coordinated services for the Zero-to-Three pre-schoolers under PL 99-457. It offers a challenge to physicians as case-managers and team-players, in order to support the family whose children have special medical needs (it's really what the good old family practitioner did in the old days!)."

Cal gives a lot of credit to our own legislator and leader Senator Mamoru Yamasaki for implementing expansion by the State: "Project Healthy Start will now expand to cover over 60% of all at-risk children under five in the coming two years (in Hawaii)," says Cal. "The Zero-to-Three Hawaii Project was signed into law, following our successful lobbying efforts." [Cal gives the credit to the HMA, but he deserves most of it himself/Ed.]

The project offers great things to little kids. However, what concerns us to some degree is how intervention can be accomplished, whether the privacy of a family should be breached, even by persons with the best and most altruistic intentions in the world. It will not be easy. It will require considerable training and expertise.

J.I. Frederick Reppun, MD
Editor

. . . Cal's baby is growing up

The medical home and PL 99-457 in Hawaii

Calvin C.J. Sia, MD*
Jean L. Stewart, MA, MPH**

The concept of the "medical home" was adopted by the Hawaii Medical Association and the Hawaii Chapter of the American Academy of Pediatrics in the Child Health Plan over 10 years ago. The medical home is an integrated system of services that focuses on the well-being of the child, within the context of the family. Primary health care under the medical home would be continuous and comprehensive, addressing the needs of the whole child. It would provide coordinated care that is family-centered, community-based. Several recent publications have emphasized the importance of the medical home in providing access to a continuum of medical and health services to enable young children to develop and maintain a state of optimal health[1,2,3].

In 1985, Project Healthy Start implemented the concept of the medical home by identifying at-risk infants at the time of birth. Family outreach workers, also known as home visitors, offer family support services to prevent child abuse and neglect. Access to care for these infants was then pursued to assure a medical home for well-child, health supervision. Physician sensitivity to the importance of early screening to identify this "new morbidity" has been bolstered by an office of material and child health SPRANS Physician Involvement Project Grant.

Recent legislative support, nationally and statewide, has also placed more emphasis on the birth-to-3 population. Public Law 99-457 provides an opportunity for Hawaii's pediatricians to become increasingly active participants in care coordination for families of their young patients with special needs, providing family-centered, community-based services.

Passed by Congress in October 1986, PL 99-457 extends the rights, guarantees, and protections of PL 94-142, Education of All Handicapped Children's Act, to infants, toddlers and preschool children. The law establishes two separate programs: Title 1 authorizes services for infants

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* Past President, Hawaii Medical Association
Past President, Hawaii Chapter American Academy of Pediatrics
** Director, Zero to Three Hawaii Project

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and toddlers; Title II mandates services for preschool children. Although services to infants and toddlers are discretionary, thus far all states have elected to participate.

Through this new law, Congress expressed its conviction that:

> "Studies of the effectiveness of preschool education for the handicapped have demonstrated beyond doubt the economic and educational benefits of programs for young, handicapped children. In addition, the studies have shown that the earlier intervention is started, the greater is the ultimate dollar savings and the higher is the rate of educational attainment by these handicapped children."[4]

State departments of education must administer Title II and are responsible by 1991 for serving all preschool handicapped children with a free, appropriate education, provided in the least restrictive environment. This means that preschool handicapped children could be served in regular preschools or day-care centers. In recognition of the difficulties in providing a differential diagnosis for many preschool children, Congress decreed that these children may be served non-categorically, without the diagnostic label that is required for older handicapped children. Payment for training and support services for parents of preschool handicapped children is also encouraged in the new law.

However, under Title I, the governor of each state is responsible for designating which department or agency will be the "lead agency" for implementation of the infant and toddler program. For the State of Hawaii, the Governor has designated the Department of Health as the lead agency. The program is being implemented by the Zero-to-Three Hawaii Project. This project is intended to be an umbrella for the coordination of services for this population, through collaboration with all the relevant agencies and providers over a broad range of intervention services.

Congress also mandated the establishment of an Interagency Coordinating Council. In Hawaii it is called the Hawaii Early Intervention Coordinating Council (HEICC) and is composed of 15 members, two of whom are practicing physicians in the State. Members of the Hawaii Chapter of the American Academy of Pediatrics serve on committees of the Council and are actively involved in planning all aspects of the service-delivery system.

Establishing the definitions for the population to be served was one of the first accomplishments of the Council. Hawaii's pediatrician community spoke in a strong, united voice as advocates for a broadly based definition that would serve all children at-risk for academic failure. As a result Hawaii now has one of the most comprehensive definitions in the country, of the population eligible for services.

Children will be eligible for services under one of three categories[5]:

Developmental Delay. Any infant or toddler who has a significant delay in one or more of the following areas of development: Cognition, speech/lan-

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2. For the prevention of potassium depletion when the dietary intake is inadequate in the following conditions: Patients receiving digitalis and diuretics for congestive heart failure, hepatic cirrhosis with ascites, states of aldosterone excess with normal renal function, potassium-losing nephropathy, and with certain diarrheal states.

3. The use of potassium salts in patients receiving diuretics for uncomplicated essential hypertension is often unnecessary when such patients have a normal dietary pattern. Serum potassium should be checked periodically, however, and if hypokalemia occurs, dietary supplementation with potassium-containing foods may be adequate to control milder cases. In more severe cases supplementation with potassium salts may be indicated.

CDNTRAINDICATIONS: Potassium supplements are contraindicated in patients with hyperkalemia since a further increase in serum potassium concentration in such patients can produce cardiac arrest. Hyperkalemia may complicate any of the following conditions: Chronic renal failure, systemic acidosis such as diabetic acidosis, acute dehydration, extensive tissue breakdown as in severe burns, adrenal insufficiency, or the administration of a potassium-sparing diuretic (e.g., spironolactone, triamterene).

Wax-matrix potassium chloride preparations have produced esophageal ulceration in certain cardiac patients with esophageal compression due to enlarged left atrium.

All solid dosage forms of potassium chloride supplements are contraindicated in any patient in whom there is cause for arrest or delay in tablet passage through the gastrointestinal tract. In these instances, potassium supplementation should be with a liquid preparation.

WARNINGS: Hyperkalemia—In patients with impaired mechanisms for excreting potassium, the administration of potassium salts can produce hyperkalemia and cardiac arrest. This occurs most commonly in patients given potassium by the intravenous route but may also occur in patients given potassium orally. Potentially fatal hyperkalemia can develop rapidly and be asymptomatic. The use of potassium salts in patients with chronic renal disease, or any other condition which impairs potassium excretion, requires particularly careful monitoring of the serum potassium concentration and appropriate dosage adjustment.

Interaction with Potassium Sparing Diuretics—Hypokalemia should not be treated by the concomitant administration of potassium salts and a potassium-sparing diuretic (e.g., spironolactone or triamterene) since the simultaneous administration of these agents can produce severe hyperkalemia.

Gastrointestinal Lesions—Potassium chloride tablets have produced stenotic and/or ulcerative lesions of the small bowel and deaths. These lesions are caused by a high localized concentration of potassium ion in the region of a rapidly dissolving tablet, which injures the bowel wall and thereby produces obstruction, hemorrhage or perforation.

K-OUR tablets contain micro-crystalloids which disperse upon disintegration of the tablet. These micro-crystalloids are formulated to provide a controlled release of potassium chloride. The dispersibility of the micro-crystalloids and the controlled release of ions from them are intended to minimize the possibility of a high local concentration near the gastrointestinal mucosa and the ability of the KCl to cause stenosis or ulceration. Other means of accomplishing this (e.g., incorporation of potassium chloride into a wax matrix) have reduced the frequency of such lesions to less than one per 100,000 patient years (compared to 40–50 per 100,000 patient years with enteric-coated potassium chloride) but have not eliminated them. The frequency of GI lesions with K-OUR tablets is, at present, unknown. K-DUR tablets should be discontinued immediately and the possibility of bowel obstruction or perforation considered if severe vomiting, abdominal pain, distention, or gastrointestinal bleeding occurs.

Metabolic Acidosis—Hypokalemia in patients with metabolic acidosis should be treated with an alkalinizing potassium salt such as potassium bicarbonate, potassium citrate, potassium acetate, or potassium gluconate.

PRECAUTIDNS: The diagnosis of potassium depletion is ordinarily made by demonstrating hypokalemia in a patient with a clinical history suggesting some cause for potassium depletion. In interpreting the serum potassium level, the physician should bear in mind that acute alkalosis per se can produce hypokalemia in the absence of a deficit in total body potassium while acute acidosis per se can increase the serum potassium concentration into the normal range even in the presence of a reduced total body potassium. The treatment of potassium depletion, particularly in the presence of cardiac disease, renal disease, or acidosis requires careful attention to acid-base balance and appropriate monitoring of serum electrolytes, the electrocardiogram, and the clinical status of the patient

Laboratory Tests: Regular serum potassium determinations are recommended. In addition, during the treatment of potassium depletion, careful attention should be paid to acid-base balance, other serum electrolyte levels, the electrocardiogram, and the clinical status of the patient, particularly in the presence of cardiac disease, renal disease, or acidosis.

Drug Interactions: Potassium-sparing diuretics; see **WARNINGS**.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Long-term carcinogenicity studies in animals have not been performed.

Pregnancy Category C: Animal reproduction studies have not been conducted with K-DUR. It is also not known whether K-DUR can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. K-OUR should be given to a pregnant woman only if clearly needed.

Nursing Mothers: The normal potassium ion content of human milk is about 13 mEq per liter. Since oral potassium becomes part of the body potassium pool, so long as body potassium is not excessive, the contribution of potassium chloride supplementation should have little or no effect on the level in human milk.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIDNS: One of the most severe adverse effects is hyperkalemia (see **CDNTRAINDICATIONS, WARNINGS,** and **OVERDOSAGE).** There have also been reports of upper and lower gastrointestinal conditions including obstruction, bleeding, ulceration, and perforation (see **CONTRAINDICATIONS** and **WARNINGS);** other factors known to be associated with such conditions were present in many of these patients.

The most common adverse reactions to oral potassium salts are nausea, vomiting, abdominal discomfort, and diarrhea. These symptoms are due to irritation of the gastrointestinal tract and are best managed by taking the dose with meals or reducing the dose.

Skin rash has been reported rarely.

DVERDOSAGE: The administration of oral potassium salts to persons with normal excretory mechanisms for potassium rarely causes serious hyperkalemia. However, if excretory mechanisms are impaired or if potassium is administered too rapidly intravenously, potentially fatal hyperkalemia can result (see **CONTRAINDICATIONS** and **WARNINGS**). It is important to recognize that hyperkalemia is usually asymptomatic and may be manifested only by an increased serum potassium concentration and characteristic electrocardiographic changes (peaking of T-waves, loss of P-waves, depression of S-T segment, and prolongation of the OT-interval). Late manifestations include muscle-paralysis and cardiovascular collapse from cardiac arrest.

Treatment measures for hyperkalemia include the following:

1. Elimination of foods and medications containing potassium and of potassium-sparing diuretics.
2. Intravenous administration of 300 to 500 ml/hr of 10% dextrose solution containing 10–20 units of insulin per 1,000 ml.
3. Correction of acidosis, if present, with intravenous sodium bicarbonate.
4. Use of exchange resins, hemodialysis, or peritoneal dialysis.

In treating hyperkalemia, it should be recalled that in patients who have been stabilized on digitalis, too rapid a lowering of the serum potassium concentration can produce digitalis toxicity

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THE MEDICAL HOME *continued*

guage, physical/motor, vision, hearing, psychosocial, or self-help skills.

Biological Risk. Any infant who has a diagnosed medical (physical or mental) condition that has a high probability of resulting in developmental delay, or any newborn with very low birthweight (<1,500 grams).

Environmental Risk. Any infant or toddler who is at-risk because of physical, social or economic factors which may limit his/her development.

During recent sessions of the Fifteenth Hawaii Legislature, a number of bills were passed to expand greatly the services for this population. These include HB 845, which provides permissive statutory legislation for the establishment of early intervention services statewide. Included also was legislation to expand Healthy Start to cover almost the entire State over the next two years. A $1 million appropriation over two years was also obtained to develop case management services and a central directory of services. Both the Hawaii Medical Association and the Hawaii Chapter of the American Academy of Pediatrics gave testimony in support of these measures.

The appropriation will establish a central directory that will be available as a resource for physicians to obtain access to information on early intervention services statewide. This directory will also provide a single point of contact for referral of infants and toddlers to assure that once in the system, they do not get lost or fall between the cracks.

PL 99-457 requires that each family have an Individualized Family Support Plan (IFSP). The case management appropriation will be used to implement the IFSP for all developmentally delayed and biologically at-risk infants and toddlers. This IFSP is intended to identify family goals and strengths to assist them in meeting the special needs of their infant or toddler. The IFSP is an affirmation of the family-centered care principle that families are the constant in the child's life; therefore, infants and toddlers with special needs must be served with family support and involvement. A grant proposal is currently being written to facilitate the role of the Medical Home in care coordination, especially for children at environmental risk.

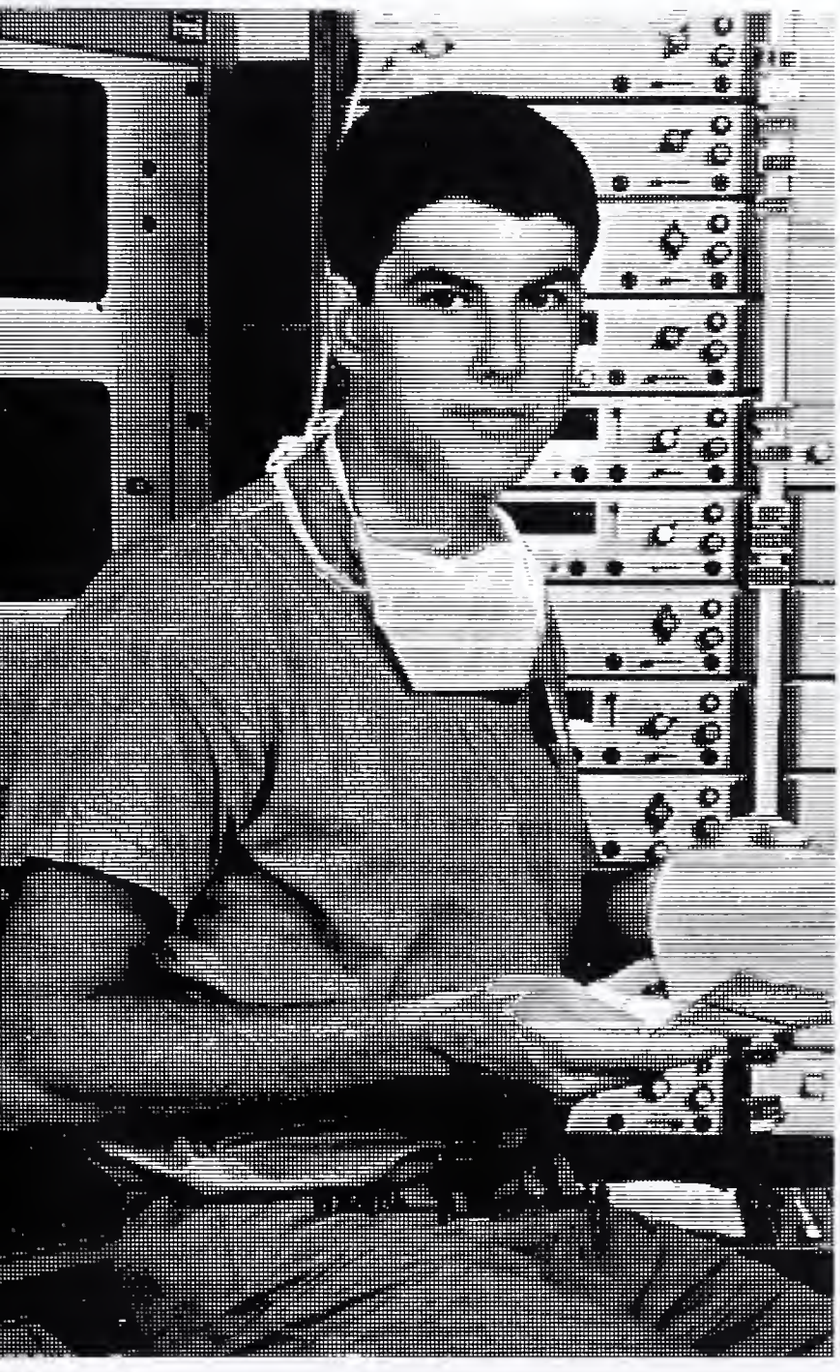
Hawaii's own Kauai Study formed much of the research base for the value of family-centered care as demonstrated through the IFSP. Werner[6] found that "overall rearing conditions were more powerful determinants of outcome than perinatal trauma. The better the quality of the home environment, the more competence the child displayed." That study documented that there was a need to identify resilient, protective factors that could be maximized to the child's advantage.[7]

Problems

Although Hawaii has a model, early-intervention program[8], including potentially the very first, statewide system for prevention of child abuse and neglect, and a national model for physician involvement and training[9], there remain many glaring gaps in services[10]. Locally, early identification remains a troubling problem, with far too few, environmentally at-risk children receiving period-

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ic developmental assessments. The recent increase in the reimbursement levels for physicians to do developmental screening should encourage increased interest in screening by primary physicians.

Another problem concerns the late identification of young children with severe hearing impairments. A recent study within the Department of Health found that these children are not identified, on the average, until after they are 4 years old. The age of identification varies considerably, depending on where the child lives and whether the child is covered by private health insurance.

Therapy services continue to be very limited, especially on the neighbor islands. There are needs for more intensive services, especially for those children recently released from acute-care facilities. Long delays are experienced in getting young children actually enrolled and receiving services in community programs. Financing mechanisms are currently not being fully identified and utilized. Family support services are inadequate, especially respite-care services. Hawaii has one of the nation's highest, out-of-home, placement rates for young, developmentally disabled children.

The pivotal role of the medical home has not yet reached its full potential for care coordination. The medical home provides an ideal opportunity for highlighting early periodic screening and continuity of care[8]. However, too few of the children at greatest risk, those from dysfunctional families, make adequate use of the medical home.

Summary

PL 99-457 provides a national entitlement to assure a comprehensive system of services for infants and toddlers with special needs. Through HB 845, (now Act 107-98) the Fifteenth Hawaii Legislature voiced its strong support for early intervention services.

Hawaii's pediatric-care community stands firmly with the authors of the Kauai Study[7], the Berman Report[11], and leading foundation studies[12,13,14], in ceaselessly advocating the prevention of "the epidemiology of adolescent rotten outcomes"[15]. As a nation and as a community, we must develop a quality-control, "zero-reject policy" for children. Prevention is cost-effective in terms of both economic and human resources. The State and Nation's future depends on breaking the cycle of disadvantage, poverty, and abuse that spawns so much violence, joblessness, and disintegration.

PL 99-457 encourages physicians to join with the business community[16] and the nation's governors[17] in this "survival" issue by recognizing the urgent need for early prevention services through family-centered, community-based, early-intervention services. It emphasizes the need to strengthen the concept of the medical home. The cost of prevention is a bargain when it is compared to the current cost of society's failures. As physicians concerned about the quality of life for young patients and their families, we should welcome PL 99-457, which provides new opportunities for a place in the sun for children of the shadows.



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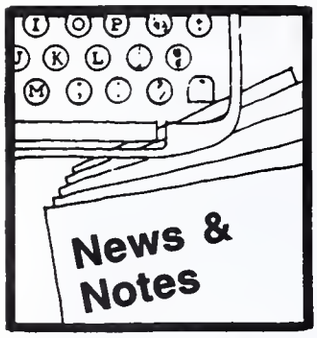
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HENRY YOKOYAMA, MD

Life In These Parts . . .

The 42-year-old engineer was apprehensive. . . "My pressure must be up. . . I had a stressful meeting this morning. . . and my left ear has been ringing for the past two hours. . ." We started to reassure him that BP elevation was usually asymptomatic, but then, we could also hear a high-pitch buzz. . . We checked the aquarium pump, the FM radio, and the faucet. . . The sound was definitely louder near the patient. . . We asked him if he carried a beeper. . . The embarrassed patient pulled out of his wallet a miniaturized hearing aid that was buzzing merrily along. . .

The Niall Scullys toured the East Coast after a thoracic surgery meeting. . . They averted disaster by driving south to Jacksonville, Florida, when they found themselves targeted by Hurricane Hugo. . . The highlight of their vacation was the special tour of the White House, courtesy of tickets from Pat Saiki's office. . . Peggy discovered to her embarrassment that her titanium hips could trigger the White House metal detectors. . .

Milton Howell left the town of Glencoe, Minnesota, 27 years ago where he was mayor because he and his wife, Roselle, wanted their four children to have a broadening experience. . . He settled in Hana, Maui, and as the only physician, treated the rich and famous as well as the fishermen and cowboys of the tiny community. . . He is best known as the personal physician of famed aviator Charles Lindberg, but has treated Richard Pryor for hives and sutured George Harrison's scalp laceration . . . Milton left his beloved Hana in July for Seattle because Roselle's osteoporosis could no longer stand the town's rutted roads. . . "Hana has given me and my family the closest relationship with human beings we could possibly have had. . . It has taught us the patience and kindness we might not have had otherwise. . ."

Dave Donnelly says it all in his Aug. 7 column, "Hawaii". . . "Don't say 'what's up, Doc?' around Dr. Fred Reppun, editor of the HMJ unless you've got a lot of time on your hands for a reply. . . Invites to the celebration of his 50 years in practice stated, 'Fifty years of pap smears, proctos, scalpels, forceps, pokes and counseling; editorials and newsletters, HAFP, MCMS, HCMS, HMA, AMA, HMJ, PSR, IPPNW — 'Take two aspirin and it'll be better in the morning' That about sums up a half century of doctoring. . ."

"The Mark M. Mugiishi, MD, general surgeon whose association with Central Medical Clinic has been announced in the newspaper advertisements, is the same Mark Mugiishi whose appointment as new head basketball couch at Iolani School was announced last spring. . . think of the possibilities for our prep sportswriters: "Iolani really cut up the opponents' defense." "How can a doctor find time to coach?" "My associates are really understanding and cooperative," Doc Mugiishi says. . ." (From Don Chapman's column Aug. 7)

Kauai FP David Zimmerman is the celebrated "Chicken Doctor" after appearing on a Kauai Cable TV program "It's a Crazy Island". . . David was the Chicken Surgeon General who saved Dr. Domi Alongoing's life with his magical fingers when Dr. Domi was in a tragic accident.

Hana's First Health Fair

John Clark, Hana Medical Center physician, calls Hana's first health fair held July 29 as "Absolutely a tremendous success." Rick Sands, MD, wrote up the grant proposal that won funding by Queen's Medical Center for the fair and a kick-off luau the night before. . . A total 147 residents underwent health assessments. . . The fair is the beginning of a longer process called the Hana Health Project. . .

"Echoes from Old China — Life, Legends, and Lore of the Middle Kingdom" by K.S. Tom was published to coincide with the Chinese bicentennial celebration. The book is described as "an affectionate tribute to a traditional way of life disappearing in China, but preserved and perpetuated by overseas Chinese communities. . . It is a warm and entertaining account of the popular ancestors and traditions that distinguish the Chinese way of life." K.S. covers the origins of the Chinese, both legendary and scientific, and describes the major holidays and festivals of the lunar calendar. . . He writes about the goals and goddesses of the Chinese people and the traditional ways of honoring them. . . He also covers Chinese philosophers and traditional Chinese medicine; Chinese food and other inventions; birthday celebrations; marriage and funeral rites; and traditional toasts and invocations for special occasions." (From Larry Ing's column, "Ramblin 'tru Chinatown")

Professional Moves

In September, neurosurgeons Juris Bergmanis, Warren Ishida and Raymond Taniguchi and neurologists Michael Okihiro, James Pierce, and Melvin Yee announced the opening of an additional office at Pali Momi Medical Center. . . Pediatric neurologist Nancy Kuntz announced the opening of her practice at the Pali Momi Neurology and Neuro-Surgery Center, Suite 440.

Also in September, orthopedic surgeon Donald Jones rejoined the Straub Clinic. . .

There was a flurry of announcements in August. . . Internist Noboru Oishi retired from practice and internists Stanley Saiki and Peter Wai relocated to his office at The Plaza of the Pacific, 1520 Liliha St., Suite 540. . . Surgeon Scott Hundahl relocated to Professional Plaza of the Pacific, Suite 501. Pediatrician Betty Soo relocated to the Moilili Medical Building, 2525 King St., Suite 302; Internist Johnny Rebudal joined St. Francis Medical Plaza West, Leeward Health Services at 91-2141 Fort Weaver Road. . . Internist Edwin Yee moved to St. Francis Medical Office Building, 2228 Liliha St., Suite 104. . . Surgeon Ronald Wong joined Richard Omura and Clarence Sakai at 1380 Lusitana St., Suite 614, the Colo-Rectal Clinic Inc. . . Urologist Herbert Chinn opened his Windward Office at Kailua Professional Center II, 40 Aulike St., Suite 411. . . Hematologist-Oncologist Kenneth Sumida opened his office at Kuakini Medical Plaza, Suite 412. . . Still in August, OB-GYN man Stephen Lin relocated to Kapiolani Medical Center, Suite 500. . .

Sportsmen I . . .

Henry Yim celebrated his Mid Pac hole-in-one with a gathering of friends on Oct. 27. . . We learned later that the occasion was his 60th birthday and that the hole-in-one was over a year ago. . .

George Takushi (of Big Band Sound fame) had a hole-in-one at HICC 2 years ago, but as his golfing friend Eugene Masuyama explains, he was too cheap to celebrate the occasion so no one knows about it. . .

Mike Okihiro had his first hole-in-one in 32 years of play on the Mid Pac 4th Hole. He invited his friends to celebrate the event on Thursday, Nov. 2. As Mike defines it, "A hole-in-one is a perfect shot. . . and I made a perfect shot." The other members of his foursome dispute his statement. Lyle Matsuo says, "It was an ugly shot." Lionel Furukawa, a DDS who tends to exaggerate at bit said, "I'd like to say it was a perfect shot, but I cannot lie. . . He hit the ball 60 yards off line to the left toward the water pond and miracle of miracles (like Resurrection and the Immaculate Conception) the ball sliced and landed 70 yards from the pin, then skidded to the right and hit the pin. . ." Walter Pang, the 3rd member of the foursome distinctly heard Mike yell, "Ah shit!" and last saw the errant ball headed for the left sand trap, not the pin and he couldn't imagine the ball ever landing in the hole. . . Mike countered that Chinese men are all blind and that Walter really did not see his "perfect" shot. . .

Psychodynamics of Sexual Humor (Gleaned from Human Sexuality Feb. '76 issue)

"Shakespeare has been upstaged. There are no longer seven stages of a man's life. There are now three: tri-weekly, try weekly and try weakly."

☆ ☆ ☆

"An elderly man saw a little boy crying: 'What's the matter, little boy? Why are you crying?' 'I'm crying because I can't do what the big boys do,' the boy replied. The old man sat down beside him and wept too."

☆ ☆ ☆

"Do you suppose old age is creeping up on me?" the gray-haired golfer asked his golf partner. "Lately my sex drive has turned into a putt."

Conference Notes

"Harvard Resource Based RVS Physician Payment System: Details and Directions"
Mabel Smyth 4-21-89

Internist Thomas Au discussed the RBRVS (Resource Based Relative Value Scale), which is being heard by the 101st Congress. The concept favors cognitive services of the primary-care physician over that of procedure and high-tech oriented specialties. . . If approved by the 101st Congress, the RBRVS could be implemented as early as 1990. The potential shifts in Medicare incomes are as follows:

Thoracic and cardiovascular and ophthalmology (-40%)
Radiology and pathology (-25%)
General surgery (-15%)
Internal medicine (+35%)
Allergy and immunology (+50%)
Family practice (+60%)

Little change for urology ENT, orthopedic surgery, OB-Gyn and psychiatry. . .

'Recent Development in Thrombolytic Rx'
Mabel Smyth 9-28-89
VP Allan Jaffe

"No question that thrombolytic therapy reduces mortality."

GISSI Trial (Shows overall reduction in hospital mortality)

% reduction	4%	23%	17%
Hours	<1°	<3°	3°-6°

"Earlier treatment demonstrates greater patency rate."

ISIS 2 Results: (Even at 24° still show benefits) (Benefits small in the transmural group)

tPa vs SK

"No question that tPa opens more arteries than SK"

a. GISSI II: Will show less mortality with tPa over SK
Difference in mortality will be about 2%

b. Other evidence that tPa is more efficient:
1. SK trials show no benefit in inferior infarcts whereas tPa shows benefit.
2. SK has increased thrombin activity while tPa has less. FPA response to SK. . . therefore lysing clots also activates clotting. . .
3. tPa has antiplatelet aggregation function.
4. Incidence of spontaneous bleeding
SK = 8.0%
tPa = 2.1%

SPSAC

Recanalizes more than SK, but not as much as tPa. . .

"Recanalization is the name of the game. . ."

APSAC toxicity: a. Lowers BP as SK does; b. Angiitis (allergic response). . . modest incidence of 6 cases. . . re Emergency catheterization after thrombolytic therapy. . .

"No need for emergency TPA" Immediate PTCA shows no increased survival. . .

"Campylobacter Pylorii"
Lecture by visiting professor James Lewis from Georgetown Medical School on Sept. 23.

"Is peptic ulcer an infectious disease?"
"The answer is yes."

►

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NEWS AND NOTES *continued*

Campylobacter Pylorii — Rediscovered . . . Historical: 1893: found in canine stomachs; 1906: spiral bacteria found in patients with ulcerated gastric CA; 1983: organism cultured; 1985: organism a/c duodenal ulcers and relapse; 1987: treatment trials proliferate; 1988: a/c gastritis; 1989: Time will tell! Microbiology: flagella; meets Koch's postulates.

Course of infection:
50% of acute infectious heal on own. . . Most patients asymptomatic . . . Infests 20 to 25% of normal population. . . In U.S. patients have for a long time. . . Cannot be detected endoscopically. . . Histological detection only. . .

Epidemic Form:
W. Osler described Epidemic Hypochlorohydric Gastritis; 1978: outbreak in Dallas, Texas. . .

Site of Infection:
Antrum major site; present in 15% to 25% of cases (age related); asympotomatic; a/c Type B gastritis; negative endoscopic findings.

Natural History:
Rare outbreaks in Third World countries. . . Risk of infection decreases if not infected by age 30. . . Overall infection rate declining. . . Age-related phenomenon: Age 50 = 50% Age 20 = 20%

Transmission:
Natural: via fecal-oral route; respiratory droplets
Iatrogenic: Improper disinfection, eg., endoscopes, glass pH electrodes

Host Factors:
Gastric metaplasia in bulb; excess gastric acid; genetics?; impaired duodenal bicarbonate.

Diagnosis:
Invasive: mucosal biopsy; culture of tissue; rapid urease test (CLO Test)
Non-invasive: a. serology b. Urea Breath Test

Benefits of Looking:
Alternative therapy for non-ulcer patients with symptoms. . . Over 60% have Campylobacter Pylorii. . .

Treatments:
a. Colloidal Bismuth: 45% relapse in 1 year
b. Cimetidine: 80% relapse in 1 year

Why is peptic ulcer disease declining?
Increased use of antibiotics has reduced infection by Campylobacter. . . Ulcer disease has decreased since the 1950s (with advent of antibiotics)

Treatment of Campylobacter Pylorii:
a. Bismuth compound (Peptobismul) for 21 days
b. Antibiotics (Amoxicillin) for 8 to 10 days

Triple Therapy for C. Pylorii:
Peptobismul 600mg tid with
Amoxicillin 500mg tid for 14 days. . .

"Most people will say Campylobacter Pylorii is the real McCoy. . ." James Lewis

Sportsmen II . . .

Dick Ho invited Hale Irwin to Mid Pac CC several years ago. . . Henry Yim was included in the foursome. . . After playing a round, Hale was giving pointers to his fellow players. . . Finally, when Hale seemed to have forgotten him, Henry asked: "How about me?" Hale in all earnest suggested, "If I were you, I would leave my clubs in the locker. . ." Henry has made two hole-in-ones since. . .
(As told by Roy Iritani)

Tennis Joke Every Tennis Player Must Know:
He: Why are tennis players always so angry?
She: How would you feel if your balls are pressurized, painted, randomly numbered and crammed into a can?

Tennis vs. Golf
"Middle-age occurs when you are too young to take up golf and too old to rush up to the net." Franklin Pierce Adams

Letter To The Editor

August 22, 1989

Henry N. Yokoyama, MD:

RE: "Autologous Transfusion" article in *HMJ* Notes & News, August 1989 Issue

I was surprised to see the statistics provided to you by Roy Nagle, a columnist, regarding candidates for autologous transfusion: 72% is extraordinarily high.

From our statistics on blood usage in Hawaii, compiled a few years ago, we found about 35% of all blood/blood components were transfused to patients with cancer; 20-25% were transfused to heart surgery patients; 10-12% were utilized in trauma cases. Very few, if any, of these patients are candidates for autologous transfusion.

Although our primary focus is to motivate people to share their good health and donate blood for others, we certainly endorse the recommendation for autologous transfusion for patients who are medically able to provide their own blood. Not only is it the safest, with respect to viruses (his comment), but also removes all concerns about sensitization to white cell and/or platelet antigens and plasma proteins. Furthermore, it involves the patient actively in the treatment of his/her own condition.

The Blood Bank of Hawaii has offered this service to physicians for their patients for over 20 years. We are pleased that several hospitals have extended this service to patients who might not medically qualify at the Blood Bank of Hawaii.

We appreciate the value of autologous transfusions, but must recognize its limited contribution to transfusion medicine. Over 90% of patients who use blood rely on others to donate it for them.

Sincerely,
Julia Frohlich, MD
President, Blood Bank of Hawaii ■

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